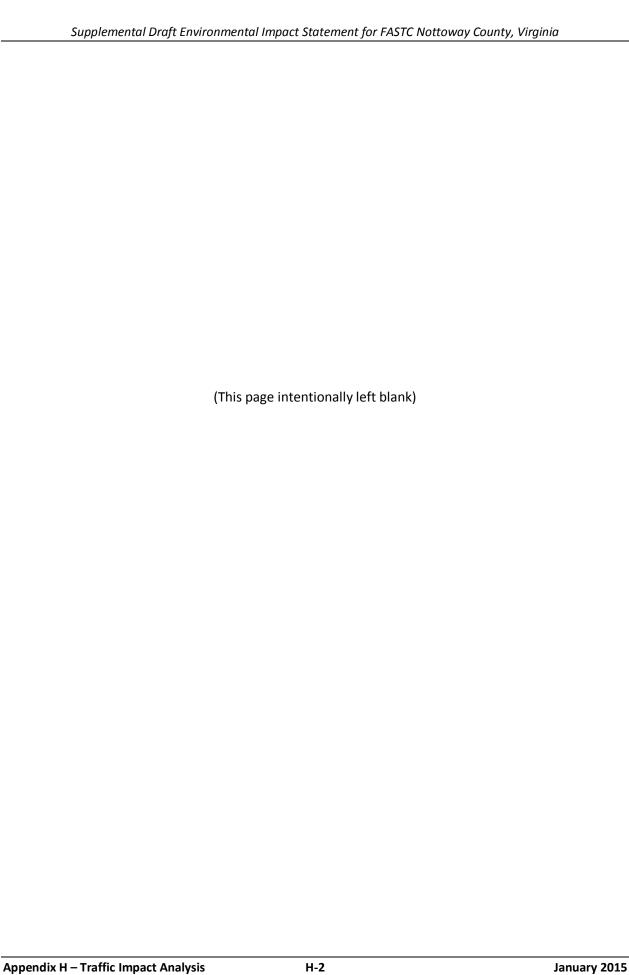
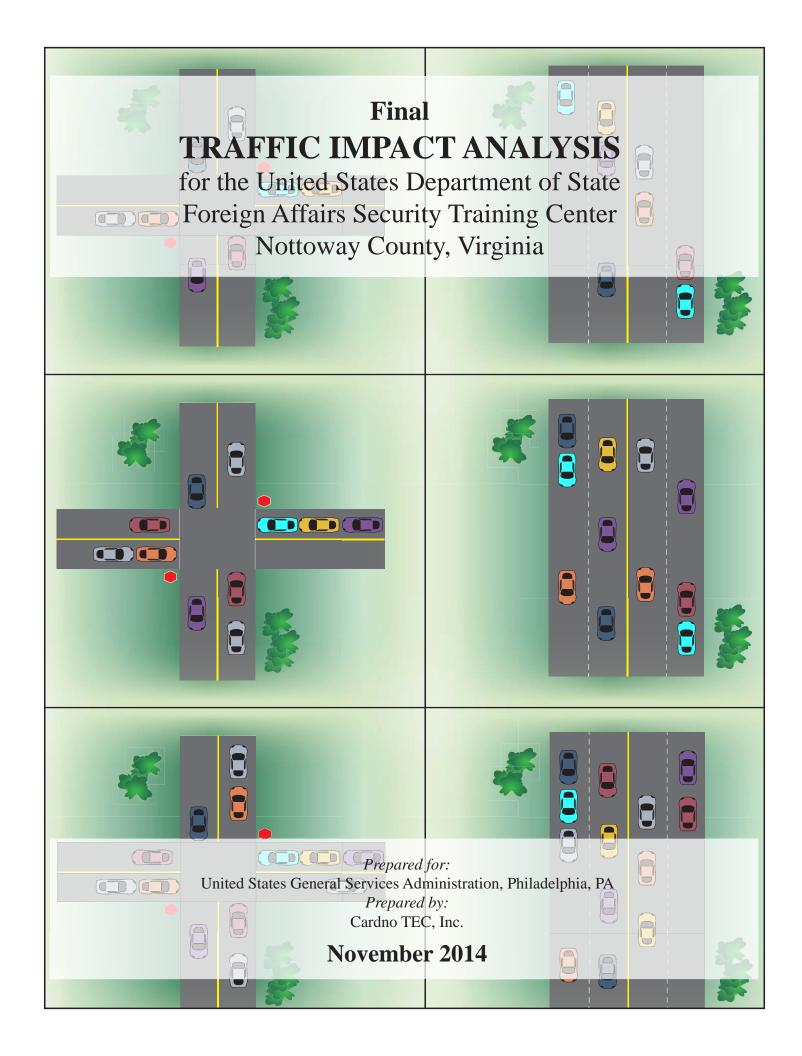
Appendix H Traffic Impact Analysis





ACRONYMS AND ABBREVIATIONS

ARNG	Army National Guard	ROI	region of influence
DOS	U.S. Department of State	SDEIS	Supplemental Draft Environmental
FASTC	Foreign Affairs Security Training Center		Impact Statement
Fort Picke	ett ARNG Maneuver Training	SR	Secondary Road
	Center Fort Pickett	TIA	Traffic Impact Analysis
GSA	U.S. General Services Administration	TRB	Transportation Research Board
HCM	Highway Capacity Manual	U.S.	United States
ITE	Institute of Transportation Engineers	VA Route	Virginia Route
LOS	Level of Service	VDOT	Virginia Department of Transportation
LRA	Local Redevelopment Authority	vph	vehicles per hour
MUTCD	Manual on Uniform Traffic Control Devices	vphpl	vehicles per hour per lane

EXECUTIVE SUMMARY

This Traffic Impact Analysis (TIA) has been prepared to analyze the traffic-related effects of the proposed United States (U.S.) Department of State (DOS) Bureau of Diplomatic Security Foreign Affairs Security Training Center (FASTC) (the Proposed Action), a training facility for U.S. government security personnel to be established at the Army National Guard Maneuver Training Center Fort Pickett (Fort Pickett) and Local Redevelopment Authority land in Nottoway County, Virginia. The Proposed Action would consolidate hard skills training functions currently taking place at various leased and contracted facilities into one state-of-the-art center. This TIA considers planning year 2018 operational conditions because 90 percent of the training program would be operational by 2018. By 2020, 100 percent of training would be operational. This TIA evaluates the full buildout of the Proposed Action by the year 2018. The Proposed Action's year 2018 traffic generation is increased by 10 percent to capture 100 percent of project traffic.

This TIA is a supplement to an earlier TIA prepared by the U.S. General Services Administration (GSA) and DOS in 2012 (GSA/DOS 2012). The earlier TIA is referred to throughout this document as the "2012 TIA." This TIA incorporates many of the key assumptions, counts and methods used in the preceding document. However, various changes have been incorporated into the Proposed Action since the completion of the 2012 TIA, including revisions to the project footprint, site access, and on-site land uses. Because these changes would substantially alter the Proposed Action's traffic generation and trip distribution, this TIA includes updated analyses and new findings and recommendations.

Two access options are analyzed. Under Option A, access for project-related traffic to FASTC would be provided at the existing Fort Pickett Main Gate (i.e., on Military Road south of Darvills Road) and the existing Fort Pickett West Gate (i.e., on West Entrance Road west of Military Road). The existing closed gate across Dearing Avenue north of W. 10th Street would remain closed under this option. Under Option B, the main access to FASTC would be at an additional access point that would be established on Dearing Avenue, north of W. 10th Street (i.e., the existing closed gate would be replaced by an operating controlled access). This TIA assumes Fort Pickett traffic would continue to access through the Main Gate and the West Gate, and a limited amount of FASTC traffic would also access through these existing gates. The majority of all FASTC trips (i.e., approximately 80 percent), including all bus and minivan trips, would be directed to the proposed Dearing Avenue gate under Option B.

Access to and from the FASTC facility would be concentrated along Dearing Avenue between Military Road and W. 10th Street. A one-way loop circulation road (or "Entry Loop") would be constructed to the west of Dearing Avenue, and would form two intersections with this roadway. The one-way traffic flow would be from north to south. The Entry Loop would provide access to and from the FASTC Core Area. The Core Area would accommodate the majority of trips accessing the facility. These trips include passenger cars driven by instructors and staff, buses transporting students from area hotels, and minivans transporting students from the Core Area to training venues within FASTC.

The following analyses were performed under year 2018 conditions for both options.

Peak hour (i.e., 6:30 to 7:30 a.m. and 4:00 to 5:00 p.m.) capacity analysis at 15 intersections;

- Turn lane storage and taper requirements at four intersections on designated Virginia Department of Transportation (VDOT)-maintained facilities; and
- Peak hour traffic volumes and staffing requirements at Fort Pickett access gates.

This TIA also addresses traffic signal warrants and provides a qualitative assessment of site access and internal circulation. The key findings and conclusions of these analyses are described below.

- Capacity Analysis: Most traffic movements at all intersections would be characterized by Level of Service (LOS) A or B with several movements having LOS C or better conditions during both peak hours for both options. Because the Proposed Action would not cause any movement to exceed the minimum performance standard of LOS D, its traffic impacts would be less than significant and no avoidance, minimization or mitigation measures are recommended.
- Turning Lane Analysis: Although there are no direct traffic impacts, a turning lane analysis was
 performed with projected year 2018 traffic volumes using VDOT design criteria for Access
 Management (VDOT 2005). These criteria address turning lane needs and design features to ensure
 safe and efficient traffic movements.
 - O Under the No Action Alternative without the proposed project, the turning lane analysis determined that 2018 traffic volumes would result in the existing turning lane storage being less than VDOT design standards at two intersections, and that the following turning lane improvements may be warranted:
 - 1. New exclusive westbound left turn lane, including storage and taper, at the Cox Road/Military Road intersection.
 - 2. Extend the existing eastbound right turn lane storage and taper at the Darvills Road/Military Road intersection.
 - Under Build Alternative 3 for Option A and B, although there are no significant direct traffic impacts from the proposed project, the turning lane analysis determined that additional project-related traffic would result in the existing turning lane storage being less than VDOT design standards at three intersections. One movement of the U.S. Route 460/Cox Road intersection would be less than standard under Option A or B. Under Option B only, one movement at the Darvills Road/Military Road intersection and one movement at the Darvills Road/Dearing Avenue intersection would be less than standard. To address VDOT policy for turning lane storage criteria, the following turning lane improvements may be warranted at these three additional intersections:
 - 1. Extend the existing westbound left turn lane storage and taper at the U.S. Route 460/Cox Road intersection (Option A and B).
 - 2. New exclusive westbound right turn lane, including storage and taper, at the Darvills Road/Military Road intersection (Option B only).
 - 3. Extend the existing eastbound right turn lane storage and taper at the Darvills Road/Dearing Avenue intersection (Option B only).
- Fort Pickett Gate Analysis: Neither option would increase traffic levels at either the Main Gate or the West Gate so as to necessitate additional guards to process inbound trips. Under Option B, the projected future inbound volume at the proposed access gate on Dearing Avenue would be 148 vehicles during the morning peak hour. This is substantially below the minimum threshold of 375

- vehicles per hour established by Virginia Army National Guard for two guards per lane. Therefore, based on Virginia Army National Guard criteria, a single guard would suffice at this location. However, the actual number of guards at this gate would be determined by DOS based upon a review of their doctrine and practice for access control.
- Internal Circulation: The Core Area would accommodate a mixture of vehicles, including personal vehicles, buses, and minivans. Also, there would be substantial pedestrian activity at the Core Area, as students would transfer from buses to minivans at this location. The following traffic circulation measure would avoid potential transportation-related effects:
 - 1. It is recommended that the Entry Loop be designed to accommodate and efficiently process vehicles approaching the Core Area. As feasible, passenger cars traveling to and from the surface parking lot should be separated from buses, minivans, and pedestrians. Where queues may form, sufficient storage should be provided to avoid blocking adjacent lanes and to prevent vehicles from stacking onto Dearing Avenue. To facilitate the transfer of students, minivans should be scheduled to arrive and park before buses in the morning, while buses should be in place before the arrival of minivans in the afternoon. Signage, pavement markings, pedestrian islands and other design elements should be considered to accommodate safe and efficient pedestrian movement at the Core Area.

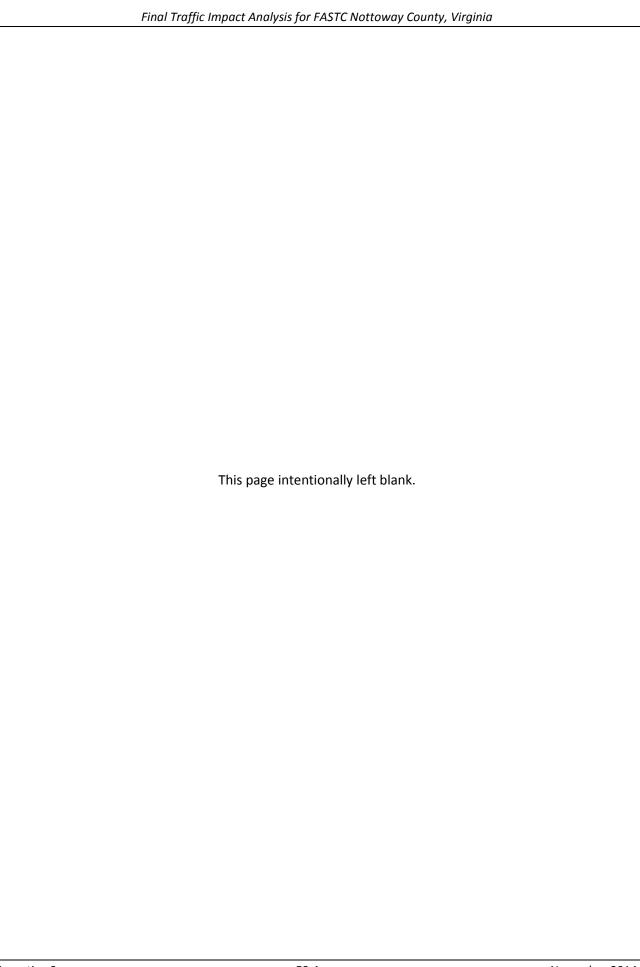


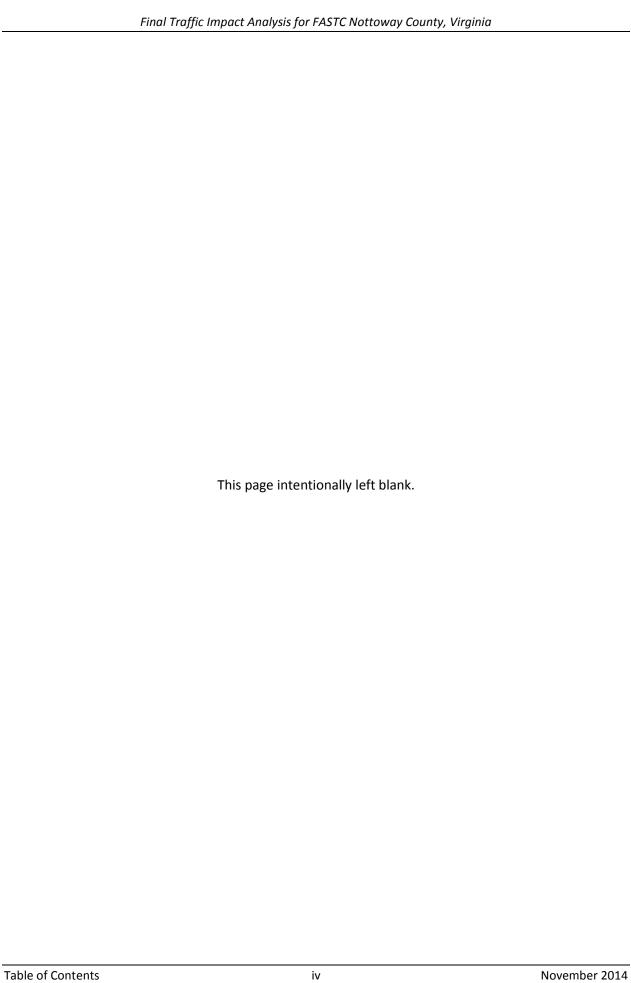
TABLE OF CONTENTS

ACRONYM:	S AND A	ABBREVIATIONS	Inside Front Cover
EXECUTIVE	SUMM	ARY	ES-1
CHAPTER 1	INT	RODUCTION	1-1
1.1	PROJEC	T LOCATION	1-1
1.2	PROJEC	t Background	1-1
	1.2.1	Overview of the Proposed Action	1-1
	1.2.2	Previous Studies	1-3
1.3	Access	Options	1-4
	1.3.1	Option A	1-4
	1.3.2	Option B	1-4
CHAPTER 2	AN	ALYSIS METHODS	2-1
2.1	CAPACI	ry Analysis Procedures	2-1
	2.1.1	Intersection LOS	2-1
	2.1.2	Target LOS and Significance Criteria	2-2
2.2	OTHER	Traffic Analyses	2-2
	2.2.1	Turn Lane Analysis	2-2
	2.2.2	Fort Pickett Access Gate Analysis	2-2
	2.2.3	Intersection Control Warrants	2-3
2.3	OTHER	Considerations	2-3
2.4	TRAFFIC	REGION OF INFLUENCE	2-3
CHAPTER 3	EXI	STING CONDITIONS	3-1
3.1	Existin	G Traffic Counts	3-1
3.2	Existin	G Transportation Network	3-1
3.3	INTERSE	CTION LOS	3-4
3.4	OTHER	Traffic Analyses	3-5
	3.4.1	Turn Lane Analysis	3-5
	3.4.2	Fort Pickett Access Gate Analysis	3-6
	3.4.3	Intersection Control Warrants	3-6
CHAPTER 4	NO	ACTION ALTERNATIVE (YEAR 2018)	4-1
4.1	PROJEC	TED TRAFFIC GROWTH	4-1
4.2	INTERSE	CTION LOS	4-1
4.3	OTHER	Traffic Analyses	4-6
	4.3.1	Turn Lane Analysis	4-6
	4.3.2	Fort Pickett Access Gate Analysis	4-7
	4.3.3	Intersection Control Warrants	4-7

CHAPTER 5	PROJECT TRAFFIC	5-1
5.1	TRAFFIC GENERATION	5-1
5.2	TRIP DISTRIBUTION	5-2
5.3	OPTION A TRAFFIC VOLUMES	5-4
5.4	OPTION B TRAFFIC VOLUMES	5-4
CHAPTER 6	PROJECT IMPACTS	6-1
6.1	BUILD ALTERNATIVE 3, ACCESS OPTION A	6-1
	6.1.1 Intersection LOS	6-1
	6.1.2 Other Traffic Analyses	6-2
6.2	BUILD ALTERNATIVE 3, ACCESS OPTION B	6-5
	6.2.1 Intersection LOS	6-5
	6.2.2 Other Traffic Analyses	6-6
6.3	CONSTRUCTION IMPACTS	6-9
6.4	CUMULATIVE IMPACTS	6-9
CHAPTER 7	FINDINGS AND RECOMMENDATIONS	7-1
CHAPTER 8	REFERENCES	8-1
	List of Attachments	
ATTACHME	NT A 2014 TRAFFIC COUNTS	A-1
ATTACHME	NT B EXCERPTS FROM THE 2012 TIA	B-1
ATTACHME	NT C INTERSECTION WORKSHEETS	C-1
ATTACHME	NT D TURN LANE ANALYSIS	D-1

List of Figures

Figure 1-1. Project Location	1-2
Figure 1-2. Build Alternative 3, Access Options A and B	1-5
Figure 2-2. Intersections in the ROI	2-5
Figure 3-1. Existing (Year 2014) Peak Hour Traffic Volumes	3-2
Figure 3-2. Existing Intersection Characteristics	3-3
Figure 4-1. No Action (Year 2018) Peak Hour Traffic Volumes	4-4
Figure 5-1. Option A Trip Distribution	5-5
Figure 5-2. Option A Traffic Assignment	5-6
Figure 5-3. Option A (Year 2018) Peak Hour Traffic Volumes	5-7
Figure 5-4. Option B Trip Distribution	5-8
Figure 5-5. Option B Traffic Assignment	5-9
Figure 5-6. Option B (Year 2018) Peak Hour Traffic Volumes	5-10
List of Tables	
Table 2-1. Traffic Conditions Associated with LOS Ratings	2-1
Table 2-2. Intersection LOS Delay Thresholds	2-2
Table 2-3. ROI Intersections	2-4
Table 3-1. Summary of Intersection LOS – Existing Conditions (Year 2014)	3-4
Table 3-2. Summary of Turn Lane Treatments – Existing Conditions (Year 2014)	3-5
Table 3-3. Summary of Gate Analysis – Existing Conditions (Year 2014)	3-6
Table 4-1. Summary of Intersection LOS – No Action Alternative (Year 2018)	4-1
Table 4-2. Summary of Turn Lane Analyses - No Action Alternative (Year 2018)	4-6
Table 4-3. Summary of Gate Analysis – No Action Alternative (Year 2018)	4-7
Table 5-1. Traffic Generation Summary	5-3
Table 6-1. Summary of Intersection LOS – Build Alternative 3, Option A (Year 2018)	6-1
Table 6-2. Summary of Turn Lane Analyses – Build Alternative 3, Option A (Year 2018)	6-3
Table 6-3. Summary of Gate Analysis – Build Alternative 3, Option A (Year 2018)	6-4
Table 6-4. Summary of Intersection LOS – Build Alternative 3, Option B (Year 2018)	6-5
Table 6-5. Summary of Turn Lane Analyses – Build Alternative 3, Option B (Year 2018)	6-7
Table 6-6. Summary of Gate Analysis – Build Alternative 3, Option B (Year 2018)	6-8



Chapter 1 INTRODUCTION

1.1 PROJECT LOCATION

This Traffic Impact Analysis (TIA) evaluates the potential traffic-related effects caused by the proposed construction and operation of a consolidated United States (U.S.) Department of State (DOS) Bureau of Diplomatic Security Foreign Affairs Security Training Center (FASTC) at Army National Guard (ARNG) Maneuver Training Center Fort Pickett (Fort Pickett) and Local Redevelopment Authority (LRA) land in Nottoway County, Virginia. This TIA supports National Environmental Policy Act analysis of the Proposed Action, and substantiates the analysis of transportation impacts documented in the Supplemental Draft Environmental Impact Statement (SDEIS) for FASTC Nottoway County, Virginia (referred to from here forward as the "FASTC SDEIS"). The proposed project site is located in south central Virginia, near the town of Blackstone in Nottoway County, approximately 60 miles southwest of Richmond and 40 miles west of Petersburg. The project site is within the Fort Pickett boundary, which contains portions of Nottoway, Dinwiddie, Brunswick, and Lunenburg Counties (Figure 1-1).

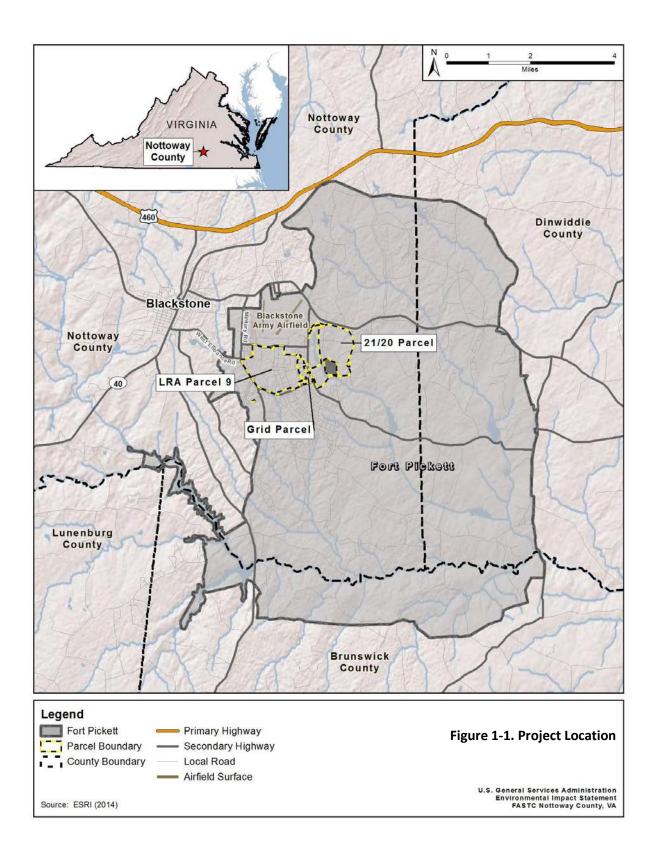
1.2 PROJECT BACKGROUND

1.2.1 Overview of the Proposed Action

The Proposed Action is the acquisition of land and the development of a consolidated DOS FASTC at Fort Pickett and LRA land in Nottoway County, Virginia. The Proposed Action would consolidate hard skills¹ training functions currently taking place at various leased and contracted facilities into one state-of-the-art center. These facilities would no longer be leased or contracted by DOS after full implementation of the Proposed Action.

After completion of construction, FASTC would be a consolidated hard skills training center for a rotating student population of 8,000–10,000 annually. FASTC would offer state-of-the-art instruction in hard skills, as well as support functions including administration and emergency medical technicians. Normal operating hours would be 7:30 a.m. to 5:00 p.m., Monday through Friday, 50 weeks a year. However, should operational needs so require, FASTC would have the capability to operate 24 hours a day, seven days a week, year round. An average of 600 students would be on-site on an average training day. Training would range from 5 days to 6 months in length, with an average student stay of 14 days.

¹ Tactical skills such as driving, weapons/explosives training, simulation, and other types of training.



FASTC staff would be anticipated to arrive at the facility between 6:30 a.m. and 8:00 a.m. and depart at 5:00 p.m., Monday through Friday. A small night crew would remain on-site for possible service calls. Similar hours are anticipated for occasional weekend training sessions. Limited night training sessions would require some FASTC staff to leave the facility between 7:00 p.m. and midnight. FASTC staff employees are anticipated to commute daily to the facility in personally operated vehicles, although a small portion may utilize van pools, if available.

Due to the substantial size of the entire project, FASTC would be constructed over a five-year period. Construction would begin in the fall of 2015 and would be completed by 2020. Training venues would begin to operate in 2016 with approximately 10 percent of training operations underway. By 2018, all training venues fundamental to the FASTC training program would be in place, and 90 percent of the training program would be operational. By 2020, 100 percent of training would be operational. Phasing schedules continue to evolve and would ultimately depend on timeframes for design and appropriated funding from Congress, but they are estimated in the FASTC SDEIS for the purposes of analysis.

1.2.2 Previous Studies

The U.S. General Services Administration (GSA) and DOS prepared a Draft Environmental Impact Statement for the FASTC project in 2012. As part of this effort, a TIA was prepared to assess the project's traffic-related effects. That document, referred to hereafter as the "2012 TIA," addressed the project's impacts on intersection capacity, turn bay storage, gate operations, and other topics (GSA/DOS 2012). This TIA is a supplement to the 2012 TIA and incorporates many of the key assumptions, counts and methods used in the preceding document. Since the completion of 2012 TIA, a draft Master Plan Update has been prepared (GSA/DOS 2014a). The Master Plan Update incorporates the following changes to the project description that are pertinent to traffic impacts:

- LRA Parcel 10, a development area located along the western boundary of Fort Pickett, is no longer a part of the Proposed Action;
- Lodging facilities have been removed from the Proposed Action. Instead, students would be housed in area hotels and would be transported to and from FASTC by bus;
- The Proposed Action may establish an access gate on Dearing Avenue to the north of W. 10th Street. (The traffic impacts associated with this access option are addressed in this TIA as Option B.); and
- As documented in the Master Plan Update, access to and from FASTC would be focused along Dearing Avenue. A Core Area would be established within the Grid Parcel, to the west of Dearing Avenue. A one-way Entry Loop circulation road would be built to connect the Core Area to Dearing Avenue. Instructors, staff and students would enter FASTC via the Entry Loop. Instructors and staff would park their personal vehicles in a surface lot, while students would be transported from the Core Area to FASTC training venues by minivans, which would be positioned at the Core Area before the students arrive by bus.

Because these changes would substantially change the number and directional distribution of project-vehicle trips, this TIA includes additional traffic data collection and updated traffic analyses.

1.3 ACCESS OPTIONS

The FASTC SDEIS evaluates one action alternative: Build Alternative 3. This TIA analyzes the traffic impacts associated with the Fort Pickett access options described below (Figure 1-2).

1.3.1 Option A

Under Option A, access to and from the project area would be provided via the existing Fort Pickett gates (i.e., the Main Gate and West Gate), which are located to the west of the proposed FASTC development. Project traffic would approach the Core Area entrance on Dearing Avenue primarily via W. 10th Street and Military Road. The existing gate across Dearing Avenue, to the north of W. 10th Street, would remain closed under this option.

1.3.2 Option B

Under Option B, a new Fort Pickett access gate would be established on Dearing Avenue, to the north of W. 10th Street. This TIA assumes Fort Pickett traffic would continue to access through the Main Gate and the West Gate, and a limited amount of FASTC traffic would also access through these existing gates. Project traffic would be able to approach FASTC via Darvills Road and Dearing Avenue. This proposed gate would accommodate the majority of FASTC trips, including all bus and minivan trips. To provide a conservative analysis, this TIA also assumes that the proposed new access gate could also be used by Fort Pickett personnel. As a result, some existing traffic accessing the installation via the Main Gate would shift to the proposed Dearing Avenue Gate.

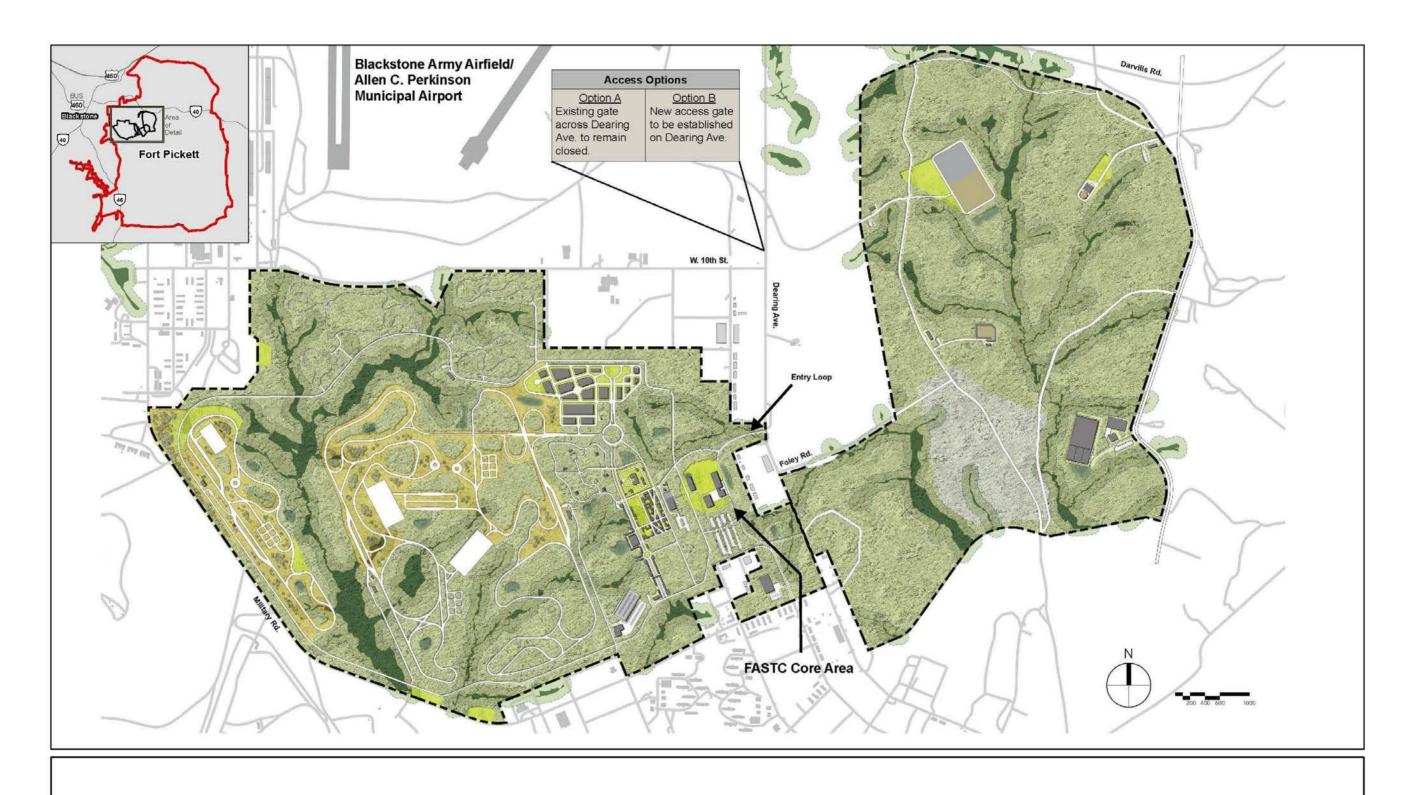


Figure 1-2. Build Alternative 3, Access Options A and B

U.S. General Services Administration Environmental Impact Statement FASTC Nottoway County, VA

Source: GSA/DOS 2014a

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Chapter 2 **ANALYSIS METHODS**

Because of the generally dispersed nature of land use development in the project area, and the absence of pedestrian, bicycle, and transit facilities and services adjacent to the FASTC site (GSA/DOS 2014a), the Proposed Action's transportation impacts would be caused by an increase in traffic (i.e., passenger cars, buses, and minivans) on the existing street network. Methods used to determine the significance of the Proposed Action's traffic impacts are described in the following paragraphs.

2.1 CAPACITY ANALYSIS PROCEDURES

Roadway and intersection operating conditions and the adequacy of existing roadway systems to accommodate projected future traffic are described in terms of Level of Service (LOS) ratings. LOS is a method used to rate the performance of streets, intersections, and other highway facilities. Developed by the Transportation Research Board (TRB), and documented since 1965 in various editions of the Highway Capacity Manual (HCM), LOS rates performance on a scale of A to F, with LOS A reflecting free flowing conditions and LOS F representing heavily congested conditions (TRB 2010). **Table 2-1** summarizes the general traffic conditions associated with each LOS rating.

Table 2-1. Traffic Conditions Associated with LOS Ratings

LOS Rating	Description of Traffic Conditions
А	Traffic flows freely, with little or no restrictions to vehicle maneuvers within the traffic stream.
В	Reasonably free-flowing conditions, with slight restrictions to vehicle maneuvers within the traffic stream.
С	Traffic speed approaches free-flowing conditions, but freedom to maneuver within the traffic stream noticeably restricted.
D	Traffic speed begins to be reduced, and freedom to maneuver is seriously limited due to a high concentration of traffic.
E	Unpredictable traffic flow, with virtually no usable gaps in the traffic stream to accommodate vehicle maneuvers.
F	Unstable traffic flow resulting in delays and the formation of queues in locations where traffic demand exceeds roadway capacity.

Source: TRB 2010.

2.1.1 Intersection LOS

Intersection capacity analysis was conducted in accordance with procedures contained in Chapter 18 (signalized intersections) and Chapter 19 (unsignalized intersections with stop signs on one or two intersection legs) of the HCM (TRB 2010). Data used in intersection analysis include peak-hour² turning movement traffic volumes, the number of lanes, the timing and phasing of the traffic signal, and other factors. Analysis was performed using the Synchro 8 software (published by Trafficware), which incorporates the current HCM analysis procedures (TRB 2010). LOS for signalized and unsignalized

² Typically the single hour having the highest concentration of traffic that occurs during traditional morning and afternoon commuting periods (i.e., 6:00 to 9:00 a.m. and 3:30 to 6:30 p.m.).

intersections is measured in terms of delay in seconds per vehicle. **Table 2-2** presents the delay values associated with each LOS grade for both signalized and unsignalized intersections.

Table 2-2. Intersection LOS Delay Thresholds

	Delay (seconds per vehicle)				
LOS Rating	Signalized Intersections	One Way Stop Controlled Intersections			
А	<u><</u> 10.0	<u><</u> 10.0			
В	>10.0 and <25.0	>10.0 and <15.0			
С	>20.0 and <35.0	>15.0 and <25.0			
D	>35.0 and <55.0	>25.0 and <35.0			
Е	>55.0 and <80.0	>35.0 and <50.0			
F	>80.0	>50.0			

Source: TRB 2010.

2.1.2 Target LOS and Significance Criteria

For the purposes of this TIA, the target LOS for intersections in the project area is LOS C. Accordingly, LOS A, B, and C are considered to be acceptable LOS, while LOS D, E, and F are considered to be unacceptable. Where a project has a significant impact on an intersection that does not meet the target LOS of C, mitigation measures may be identified to minimize or avoid the project's effect on traffic.

Based on typical industry standards, a project is considered to have a *significant impact* on the operations of an intersection when the addition of project traffic results in a LOS dropping from LOS C or better to LOS D, E or F. In addition, a project may contribute toward a substantial cumulative effect if its traffic, when taken together with traffic from past, present and reasonably foreseeable future projects, causes intersection LOS to decline from LOS A through C to LOS D through F.

2.2 OTHER TRAFFIC ANALYSES

2.2.1 Turn Lane Analysis

An increase in the number of vehicles making left or right turns at an intersection may necessitate establishing or expanding turn lanes to improve traffic flow. Consistent with Virginia Department of Transportation's (VDOT) Road Design Manual. Appendix F (VDOT 2005), a turn lane analysis was performed for left and right turn movements at unsignalized intersections along state highways that are designated as principal arterials, collectors, and local streets. Designated routes in the traffic Region of Influence (ROI) include U.S. Route 460 and Darvills Road (VA Route 40) (VDOT 2007). Therefore, four intersections (i.e., intersections 1-3 and intersection 13) were evaluated. Turn lane requirements were analyzed per VDOT criteria, which provides guidelines for establishing turn lanes on two- and four-lane highways (VDOT 2005).

2.2.2 Fort Pickett Access Gate Analysis

At present, access to Fort Pickett is controlled by two access gates. The Main Gate is located on Military Road south of the intersection of Darvills Road. The West Gate is located on West Entrance Road west of the intersection of Military Road. The need for additional personnel at each access gate was evaluated based on peak hour traffic volumes and staffing thresholds established by the Virginia Army National

Guard. Specifically, the number of guards at each gate is determined based on the number of vehicles per hour per lane (vphpl) as follows:

1. < 375 vphpl: one guard

2. ≥ 375 and < 675 vphpl: two guards

3. ≥ 675 vphpl: three guards

The No Action Alternative and Option A analyzed the two access gates included in the 2012 TIA. The proposed Dearing Avenue access gate in Option B is expected to provide minimal traffic redistribution of both project related trips and Fort Pickett personnel, as discussed in Section 1.3.2.

2.2.3 Intersection Control Warrants

Changes in traffic patterns may necessitate modification of existing forms of traffic control, such as stop signs and traffic signals. The Manual on Uniform Traffic Control Devices (MUTCD) (Federal Highway Administration 2012) provides various thresholds that may be used to assess whether or not installation of a specific traffic control device is justified to better regulate traffic. Chapter 4C of the MUTCD includes a series of nine separate warrants that may be used to evaluate traffic signal installation. Consistent with the 2012 TIA, traffic signal warrant analysis is performed only at intersections with traffic movements characterized by LOS E or LOS F (GSA/DOS 2012).

2.3 OTHER CONSIDERATIONS

VDOT has established guidelines for the scope and content of a traffic impact analysis, which are described in the VDOT Traffic Impact Regulations (henceforth referred to as Chapter 527). A VDOT TIA is not required for this project since the FASTC site will generate less than 5,000 vehicles per day, which is the minimum threshold for a Chapter 527 study. Nevertheless, the 2012 TIA was developed in consultation with VDOT staff and completed in accordance with Chapter 527 (GSA/DOS 2012). The current TIA incorporates the same methods as the 2012 TIA and therefore also complies with Chapter 527. Consistent with direction from VDOT staff in the preparation of 2012 TIA, this TIA does not include a speed survey, an assessment of collision history, or an evaluation of intersection sight distance.

2.4 TRAFFIC REGION OF INFLUENCE

For the purposes of this TIA, the ROI consists of those intersections expected to accommodate the greatest concentration of project-related traffic. These intersections lie along likely routes between the trip origins (i.e., residences for instructors and staff and area hotels for students). The ROI consists of 15 intersections (**Figure 2-2**)³. **Table 2-3** lists the ROI intersections and type of existing traffic control provided at each location.

2.0 Analysis Methods 2-3 November 2014

³ Figure 2-2 and Table 2-3 include the VDOT route designations for roadways that are part of the state-maintained highway system (i.e., U.S. Route, Virginia Route, and Secondary Road). For ease of reference, these roadways are referred to by their street name (rather than route number) throughout the remainder of this TIA.

Table 2-3. ROI Intersections

Intersection*	Traffic Control
 U.S. Route 460 (W Colonial Trail Highway)/Cox Road/Yellowbird Road SR 609) 	Two-Way Stop
2. Cox Road (U.S. Route 460 Business)/Military Road (SR 750)	One-Way Stop
3. Military Road (SR 750)/Darvills Road (VA Route 40)	Two-Way Stop
4. Military Road/W. 10th Street	Two-Way Stop
5. Military Road/ West Entrance Road	One-Way Stop
6. Military Road/Garnett Avenue (SR 756)	Two-Way Stop
7. Military Road/Armistead Avenue (SR 755)	Two-Way Stop
8. Military Road/Dearing Avenue	Two-Way Stop
9. W. 10th Street (SR 753)/Warehouse Street	One-Way Stop
10. West Entrance Road (SR 643)/8th Street/S. Main Street (VA Route 40/U.S. Route 460 Business)	Signal
11. Church Street (U.S. Route 460 Business)/S. Main Street (VA Route 40/U.S. Route 460 Business)	Signal
12. Dinwiddie Avenue (VA Route 40)/N. Main Street (VA Route 40/U.S. Route 460 Business)	Signal
13. Darvills Road (VA Route 40)/Dearing Avenue (SR 752)	One-Way Stop
14. W. 10th Street (SR 753)/Dearing Avenue (SR 752)	One-Way Stop
15. Business Driveway/Dearing Avenue (SR 752)	One-Way Stop

Notes:

^{*}Figure 2-2 depicts the intersection numbers. SR = Secondary Road; VA Route = Virginia Route.

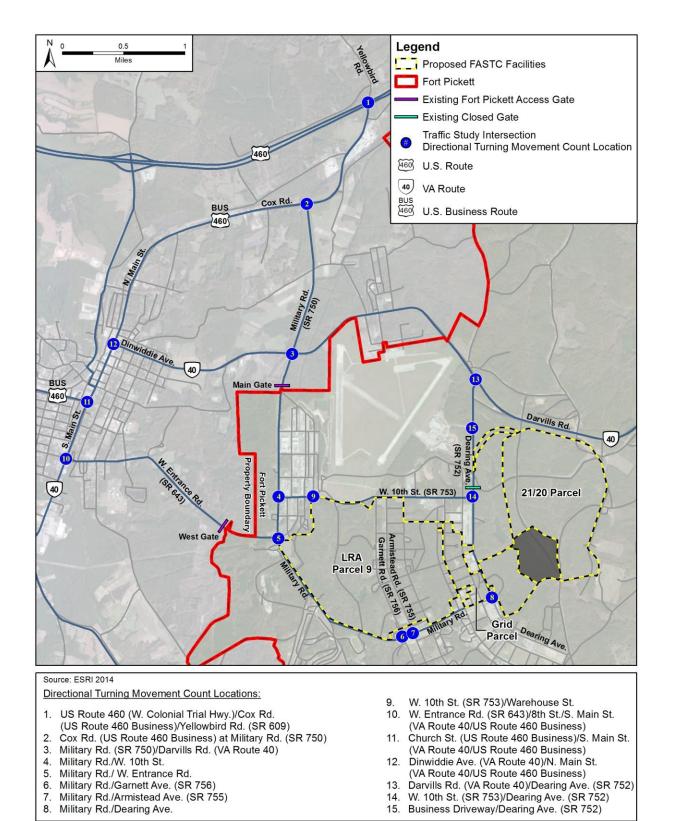


Figure 2-2. Intersections in the ROI

Chapter 3 **EXISTING CONDITIONS**

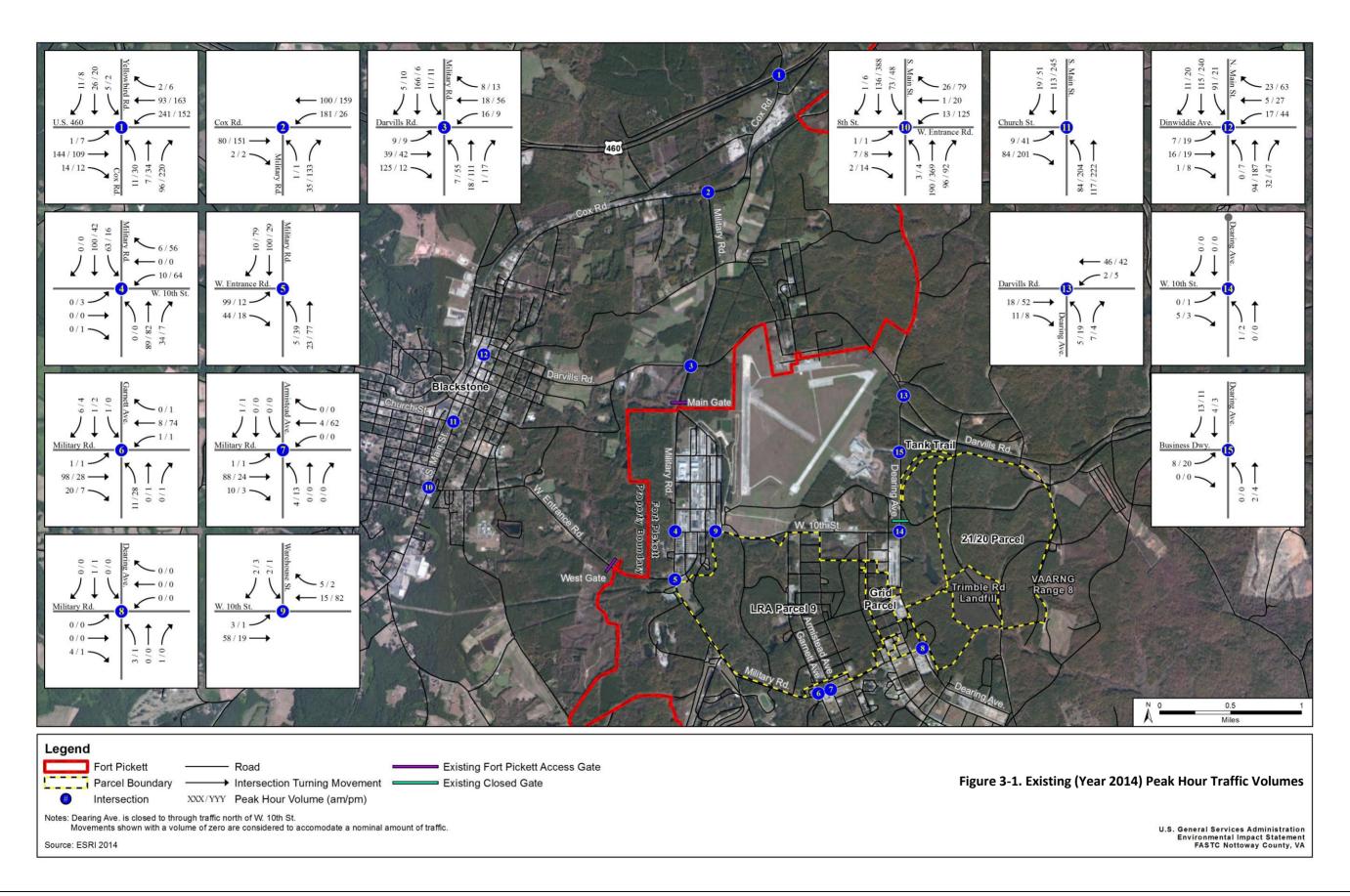
The Proposed Action would be developed within Fort Pickett, a military installation that contains several developed areas that are surrounded by undeveloped land. Access to Fort Pickett is controlled by two gates. The Main Gate is located on Military Road to the south of Darvills Road. The West Gate is located on West Entrance Road to the west of Military Road. Runways and related aviation facilities are located within the Blackstone Army Airfield/Allen C. Perkinson Municipal Airport, in the northwestern area of the installation. The Town of Blackstone is located along the western boundary of the installation. Other areas surrounding Fort Pickett to the north and east are characterized by undeveloped land, highways, and dispersed areas of low-intensity development.

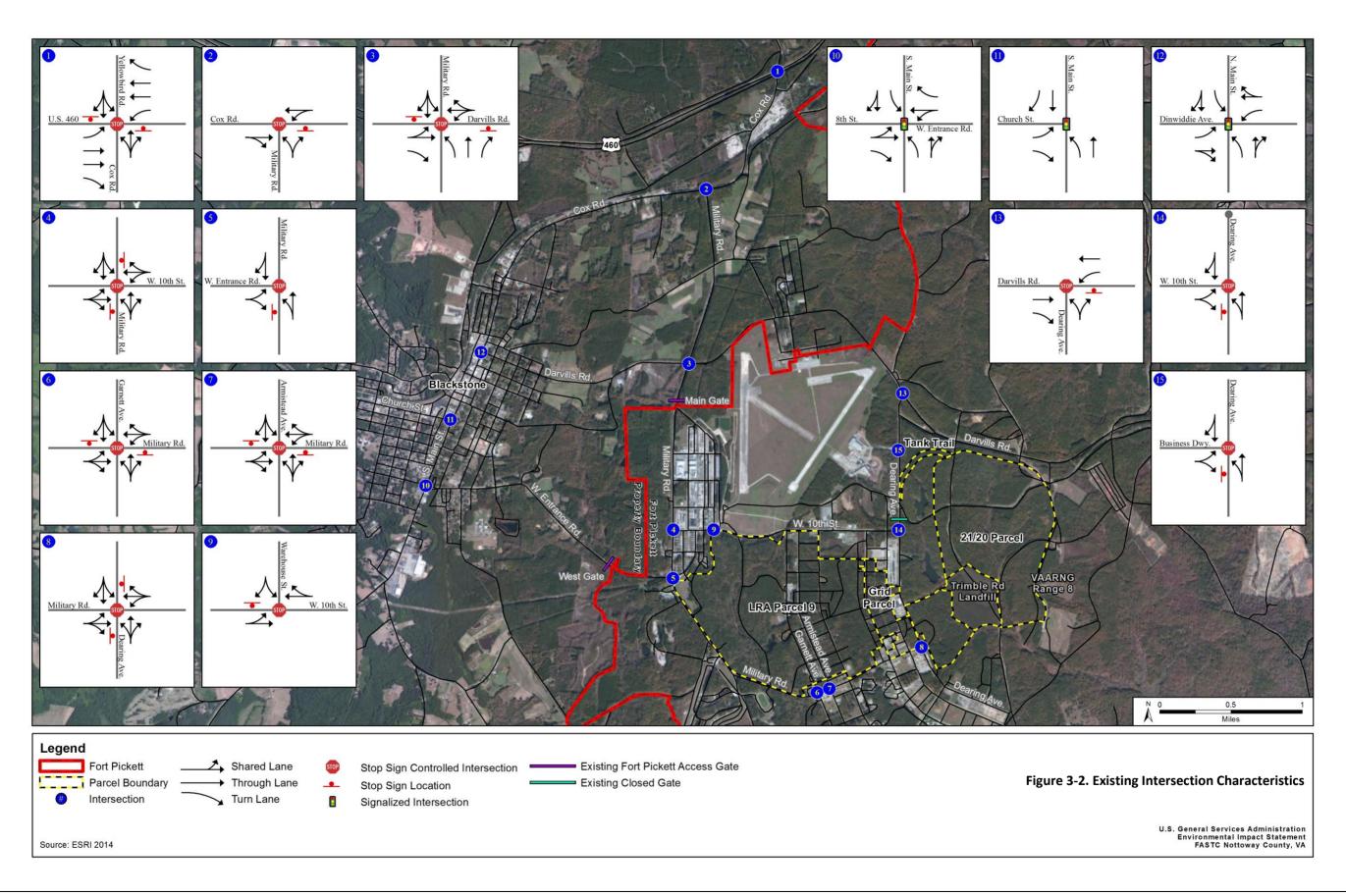
3.1 EXISTING TRAFFIC COUNTS

Peak hour traffic data for intersections 1 through 12, as described in Table 2-2, was collected in support of the 2012 TIA in April 2012. Counts at intersections 13 through 15 were completed in August 2014. A compounded annual growth rate of one percent per year (GSA/DOS 2012) was applied uniformly to all movements in the 2012 counts to provide a consistent basis for evaluating existing traffic conditions. Therefore, the analysis presented in this Chapter is for the year 2014. The peak hours are 6:30 to 7:30 a.m. and 4:00 to 5:00 p.m. (GSA/DOS 2012). **Figure 3-1** depicts existing peak hour turning movement/traffic volume counts in the ROI. Attachment A contains copies of the 2014 traffic count summaries for intersections 13 through 15.

3.2 EXISTING TRANSPORTATION NETWORK

Existing lane geometry and traffic control for all ROI intersections is presented in **Figure 3-2**. Attachment B contains excerpts from the 2012 TIA that describes posted speed limits, functional roadway classifications in the Town of Blackstone, VDOT Secondary Roads (SR) proximate to the project site, programmed transportation improvements, and the Blackstone Area Bus System. Since the publication of the 2012 TIA, new information has become available regarding programmed transportation improvements and bus route alignment and schedule. The applicable exhibits in Attachment B have been revised to include the updated information. As applicable, data contained in Attachment B has been incorporated into the analysis summarized in this and subsequent chapters, consistent with the 2012 TIA. Specifically, posted speed limit data has been incorporated into the turn lane analysis that was performed at intersections 1 through 3 (refer to Section 3.4.1).





3.3 INTERSECTION LOS

Existing traffic conditions within the ROI were evaluated using the methods described above in Chapter 2, and using the peak hour traffic volumes and intersection characteristics shown in Figures 3-1 and 3-2, respectively. Analysis worksheets for these intersections are provided in Attachment C. As shown in **Table 3-1**, most intersection movements are characterized by LOS A or B, and several have LOS C conditions during both peak hours.

Table 3-1. Summary of Intersection LOS – Existing Conditions (Year 2014)

Intersection		Traffic	Traffic Movement ^(a)	A.M. Pe		P.M. Peak Hour	
	intersection	Control	Traffic Movement	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
	U.S. Route 460 (W		NB Left/Through/Right	11.0	В	12.7	В
1	Colonial Trail Hwy)/	TWSC	EB Left	8.6	Α	7.5	Α
	Cox Rd/Yellowbird Rd	10050	WB Left	8.2	Α	7.5	Α
	cox naj renowbira na		SB Left/Through/Right	14.6	В	12.6	В
2	Cox Rd (U.S. Route	OWSC	NB Left/Right	9.2	Α	10.0	В
2	460 Bus)/Military Rd	UWSC	WB Left	7.7	Α	7.9	Α
	Darvills Rd (VA Route		NB Left	11.1	В	10.0	В
	40)/Military Rd		NB Through	10.0	В	11.0	В
3	40)/ Willitary Nu	TWSC	NB Right	8.5	Α	8.6	Α
5		10030	EB Left	7.3	Α	7.4	Α
			WB Left	7.3	Α	7.5	Α
			SB Left/Right	11.3	В	10.5	В
	W 10th St/Military Rd		WB Left/Through/Right	10.6	В	10.0	В
4		TWSC	EB Left/Through/Right	0.0	Α	9.7	Α
			SB Left	7.6	Α	7.6	Α
_	West Entrance	OMCC	NB Left	7.4	Α	7.5	Α
5	Rd/Military Rd	OWSC	EB Left/Right	10.1	В	9.4	Α
	Military Rd/Garnett		NB Left/Through/Right	9.6	Α	9.4	Α
c	Ave	TMCC	EB Left	7.2	Α	7.6	Α
6		TWSC	WB Left	7.5	Α	7.3	Α
			SB Left/Through/Right	8.8	Α	9.1	Α
	Military		NB Left/Through/Right	9.3	Α	9.1	Α
7	Rd/Armistead Ave	TWSC	EB Left	7.2	Α	7.6	Α
			SB Left/Through/Right	8.3	Α	8.7	Α
8	Military Rd/Dearing	TWSC	NB Left	7.2	Α	7.2	Α
٥	Ave	TVVSC	EB Left/Through/Right	8.3	Α	0.0	Α
0	W 10th	OWSC	EB Left	7.9	Α	7.4	Α
9	St/Warehouse St	UWSC	SB Left/Right	8.7	Α	8.9	Α
	8th St/West Entrance		Overall (all movements)	14.8	В	17.9	В
	Rd/S Main St		EB Left/Through/Right	21.6	С	28.8	С
10		Signal	WB Left/Through/Right	20.0	С	28.5	С
			NB Left/Through/Right	17.8	В	19.1	В
			SB Left/Right	9.5	Α	10.5	В
	Church St (U.S. Route		Overall (all movements)	8.3	Α	10.7	В
11_	460 Bus)/S Main St	Cianal	EB Left/Right	12.1	В	12.6	В
11	(U.S. 460 Bus/VA	Signal	NB Left/Through	5.3	Α	7.3	Α
	Route 40)		SB Through/Right	10.1	В	14.1	В

Interrocation		Traffic Traffic Movement ^(a)		A.M. Peak Hour		P.M. Peak Hour	
	Intersection		Traffic Movement	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
	Dinwiddie Ave (VA	40)/N Main St oute 460/VA Signal	Overall (all movements)	17.1	В	15.8	В
	Route 40)/N Main St		EB Left/Through/Right	21.8	С	22.2	С
12	(U.S. Route 460/VA Route 40)		WB Left/Through/Right	25.5	С	23.7	С
			NB Left/Through/Right	20.7	С	16.7	В
			SB Left/Through/Right	12.7	В	10.3	В
12	Darvills Rd (VA Route	OWSC	NB Left/Right	8.6	Α	9.1	Α
13	40)/Dearing Ave		WB Left	7.3	Α	7.3	Α
14	W 10th St/Dearing Ave	OWSC	(d)	(d)	(d)	(d)	(d)
15	Business Driveway/ Dearing Ave	OWSC	EB Left/Right	8.6	Α	8.7	Α

Notes:

Bus = Business Route; EB = eastbound; LOS = TRB; NB = northbound; OWSC = one-way stop control; SB = southbound; TWSC = two-way stop control; WB = Westbound.

3.4 OTHER TRAFFIC ANALYSES

3.4.1 Turn Lane Analysis

Existing turn lane treatments are summarized below in Table 3-2 (GSA/DOS 2012).

Table 3-2. Summary of Turn Lane Treatments – Existing Conditions (Year 2014)

able 3 2. Summary of full Euric Fredericines - Existing conditions (Fed. 20.					
Intersection and Movement	Existing Turn Lane Treatment				
U.S. Route 460 at Cox Rd (intersection 1)					
Eastbound Left	125-foot Left Turn Lane with 75-foot Taper				
Eastbound Right	50-foot Right Turn Lane with 125-foot Taper				
Westbound Left	100-foot Left Turn Lane with 150-footTaper				
Westbound Right	100-foot Right Turn Lane with 50-foot Taper				
Cox Rd and Military Rd (Intersection	on 2)				
Eastbound Right	None				
Westbound Left None					
Darvills Rd and Military Rd (interse	ection 3)				
Eastbound Left	None				
Eastbound Right	50-foot Right Turn Lane with 50-foot Taper				
Westbound Left	None				
Westbound Right	None				
Northbound Left	150-foot Left Turn Lane with 50-foot Taper				
Northbound Right	25-foot Right Turn Lane with 50-foot Taper				
Southbound Left	None				
Southbound Right	None				

⁽a) LOS is provided only for movements that would experience delay during one or both peak hours.

⁽b) Delay is measured in seconds per vehicle.

⁽c) LOS calculations are based on HCM (TRB 2010) methods, and were performed using Synchro 8.

^(d) W 10th St/Dearing Ave (intersection 14) was not analyzed because it has no conflicting movements.

Intersection and Movement	Existing Turn Lane Treatment				
Darvills Rd at Dearing Ave (intersection 13)					
Eastbound Right	110-foot Right Turn Lane with 135-foot Taper				
Westbound Left	165-foot Left Turn Lane with 110-foot Taper				

3.4.2 Fort Pickett Access Gate Analysis

The Main Gate has two inbound lanes with one guard each. As shown in **Table 3-3**, the Main Gate's existing volumes are below the 375 vphpl threshold that would necessitate more than one guard per lane, for both the morning and afternoon peak-hour. The West Gate also has two inbound lanes with one guard per lane. The morning and afternoon peak-hour volumes were also below the 375 vphpl threshold for the West Gate.

Table 3-3. Summary of Gate Analysis – Existing Conditions (Year 2014)

Main Gate (Military Road)				West Gate (West Entrance Road)			
A.M. Peak-hour (6:30-7:30 a.m.)		P.M. Peak-hour (4:00-5:00 p.m.)		A.M. Peak-hour (6:30-7:30 a.m.)		P.M. Peak-hour (4:00-5:00 p.m.)	
Lane 1	Lane 2						
vph	vph	vph	vph	vph	vph	vph	vph
188	123	15	14	64	79	14	14
Guards	Guards	Guards	Guards	Guards	Guards	Guards	Guards
1	1	1	1	1	1	1	1

Note:

vph = vehicles per hour.

3.4.3 Intersection Control Warrants

Because none of the traffic movements at any of the intersections are characterized by LOS E or LOS F, no traffic signal warrant analysis was performed. All unsignalized intersections operate at LOS A or B during both peak hours; therefore, traffic signal installation is not needed to address existing intersection delay.

Chapter 4 NO ACTION ALTERNATIVE (YEAR 2018)

The Proposed Action would be 90 percent operational in 2018 and 100 percent operational by 2020. This TIA evaluates the full buildout of the Proposed Action by 2018. The following paragraphs describe future traffic conditions in planning year 2018 without the Proposed Action.

4.1 PROJECTED TRAFFIC GROWTH

Consistent with the 2012 TIA, a compounded annual growth rate of one percent per year was applied to existing morning and afternoon peak hour volumes at all ROI intersections. This results in a growth factor of 1.0406 over the four-year period from 2014 to 2018. **Figure 4-1** shows the peak hour turning movement volumes of the No Action Alternative.

4.2 INTERSECTION LOS

Under the No Action Alternative, all intersections in the ROI are expected to have the same intersection lane geometry and traffic control as under existing conditions. **Table 4-1** displays the LOS analysis results for ROI intersections under the No Action Alternative. As shown in the table, most intersection movements within the ROI would operate at LOS A or B, and several would operate at LOS C conditions during both peak hours. Refer to Attachment C for intersection capacity worksheets.

Table 4-1. Summary of Intersection LOS – No Action Alternative (Year 2018)

Intersection		Traffic	_ (a)	A.M. Peak Hour		P.M. Peak Hour	
		Control	Traffic Movement ^(a)	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
1	U.S. Route 460 (W Colonial Trail Hwy)/ Cox Rd/Yellowbird Rd	TWSC	NB Left/Through/Right	11.1	В	13.0	В
			EB Left	8.7	Α	7.6	Α
			WB Left	8.3	Α	7.9	Α
			SB Left/Through/Right	15.1	С	12.9	В
2	Cox Rd (U.S. Route	OWSC	NB Left/Right	9.3	Α	10.1	В
2	460 Bus)/Military Rd		WB Left	7.8	Α	7.9	Α
	Darvills Rd (VA Route 40)/Military Rd	TWSC	NB Left	11.2	В	10.0	В
			NB Through	10.1	В	11.1	В
3			NB Right	8.5	Α	8.6	Α
5			EB Left	7.3	Α	7.4	Α
			WB Left	7.3	Α	7.5	Α
			SB Left/Right	11.5	В	10.6	В
	W 10th St/Military Rd	TWSC	WB Left/Through/Right	10.8	В	10.1	В
4			EB Left/Through/Right	0.0	Α	9.8	Α
			SB Left	7.6	Α	7.6	Α
5	West Entrance Rd/Military Rd	OWSC	NB Left	7.5	Α	7.5	Α
J			EB Left/Right	10.1	В	9.4	Α
	Military Rd/Garnett Ave	TWSC	NB Left/Through/Right	9.6	Α	9.5	Α
6			EB Left	7.2	Α	7.6	Α
			WB Left	7.5	Α	7.3	Α
			SB Left/Through/Right	8.8	Α	9.1	Α

Intersection		Traffic	_ (a)	A.M. Peak Hour		P.M. Peak Hour	
		Control	Traffic Movement ^(a)	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
7	Military Rd/Armistead Ave	TWSC	NB Left/Through/Right	9.4	Α	9.2	Α
			EB Left	7.2	Α	7.6	Α
			SB Left/Through/Right	8.3	Α	8.7	Α
Military Rd/Dearing		TWSC	NB Left	7.2	Α	7.2	Α
0	Ave	TVVSC	EB Left/Through/Right	8.3	Α	0.0	Α
9	W 10th St/Warehouse St	OWSC	EB Left	7.9	Α	7.4	Α
			SB Left/Right	8.7	Α	8.9	Α
	8th St/West Entrance Rd/S Main St	Signal	Overall (all movements)	15.1	В	18.2	В
			EB Left/Through/Right	21.7	С	29.8	С
10			WB Left/Through/Right	20.1	С	29.3	С
			NB Left/Through/Right	18.2	В	19.4	В
			SB Left/Right	9.6	Α	10.6	В
	Church St (U.S. Route 460 Bus)/S Main St (U.S. Route 460 Bus/VA Route 40)	Signal	Overall (all movements)	8.3	Α	11.0	В
			EB Left/Right	12.1	В	12.8	В
11			NB Left/Through	5.3	Α	7.5	Α
			SB Through/Right	10.2	В	14.5	В
	Dinwiddie Ave (VA Route 40)/N Main St (U.S. Route 460/VA 40)	Signal	Overall (all movements)	17.3	В	16.1	В
			EB Left/Through/Right	22.0	С	22.3	С
12			WB Left/Through/Right	25.4	С	23.9	С
			NB Left/Through/Right	21.1	С	17.0	С
			SB Left/Through/Right	12.9	В	10.5	В
13	Darvills Rd (VA Route	OWSC	NB Left/Right	8.7	Α	9.1	Α
	40)/Dearing Ave		WB Left	7.3	Α	7.3	Α
14	W 10th St/Dearing Ave	OWSC	(d)	(d)	(d)	(d)	(d)
15	Business Driveway/ Dearing Ave	owsc	EB Left/Right	8.6	А	8.7	А

Notes:

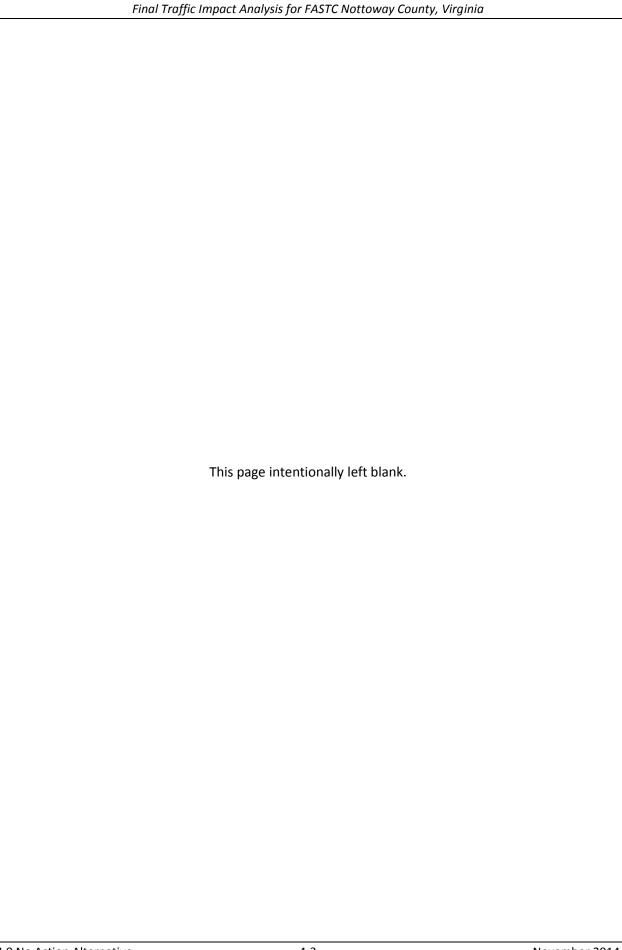
Bus = Business Route; EB = eastbound; LOS = Level of Service; NB = northbound; OWSC = one-way stop control; SB = southbound; TWSC = two-way stop control; WB = Westbound.

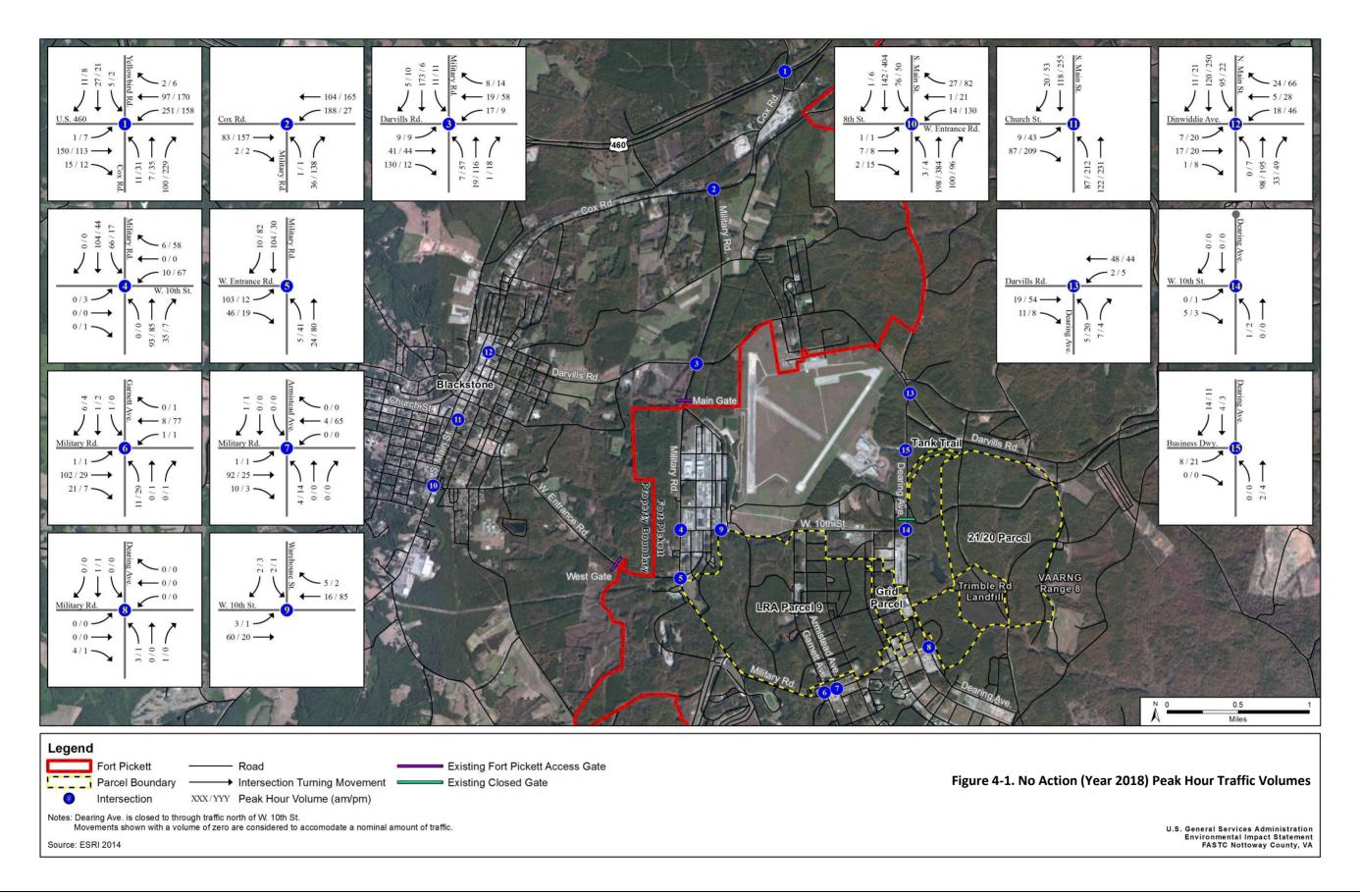
⁽a) LOS is provided only for movements that would experience delay during one or both peak hours.

⁽b) Delay is measured in seconds per vehicle.

LOS calculations are based on HCM (TRB 2010) methods, and were performed using Synchro 8.

⁽d) W 10th St/Dearing Ave (intersection 14) was not analyzed because it has no conflicting movements.





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4.3 OTHER TRAFFIC ANALYSES

4.3.1 Turn Lane Analysis

A turn lane analysis for the No Action Alternative was performed using the methods described in Chapter 2. The results of the analysis are summarized in **Table 4-2** below. The data tables and charts used in the determination of turn lane warrants are provided in Attachment D. According to this, VDOT policy would require additional turn lane treatments for the following intersections and movements:

- Cox Road westbound left at Military Road (intersection 2), and
- Darvills Road eastbound right at Military Road (intersection 3)

Table 4-2. Summary of Turn Lane Analyses - No Action Alternative (Year 2018)

Intersection and Movement	Existing Turn Lane Treatment	Turn Lane Treatment Required per VDOT Policy	Additional Treatment Required?			
U.S. Route 460 at Cox Rd (intersection 1)						
Eastbound Left	125-foot Left Turn Lane with 75-foot Taper	No Left Turn Lane Required	NO			
Eastbound Right	50-foot Right Turn Lane with 125-foot Taper	No Right Turn Lane Required	NO			
Westbound Left	150-foot Left Turn Lane with 150-footTaper	No Left Turn Lane Required	NO			
Westbound Right	100-foot Right Turn Lane with 50-foot Taper	No Right Turn Lane Required	NO			
Cox Rd at Military Rd (inter	rsection 2)					
Eastbound Right	None	No Right Turn Lane Required	NO			
Westbound Left	None	Minimum 200-foot Left Turn Lane with Minimum 200-foot Taper	YES			
Darvills Rd at Military Rd (i	ntersection 3)					
Eastbound Left	None	No Left Turn Lane Required	NO			
Eastbound Right	50-foot Right Turn Lane with 50-foot Taper	Minimum 200-foot Right Turn Lane with Minimum 200-foot Taper	YES			
Westbound Left	None	No Left Turn Lane Required	NO			
Westbound Right	None	No Right Turn Lane Required	NO			
Northbound Left	150-foot Left Turn Lane with 50-foot Taper	No Left Turn Lane Required	NO			
Northbound Right	25-foot Right Turn Lane with 50-foot Taper	No Right Turn Lane Required	NO			
Southbound Left	None	No Left Turn Lane Required	NO			
Southbound Right	None	No Right Turn Lane Required	NO			
Darvills Rd at Dearing Ave (intersection 13)						
Eastbound Right	110-foot Right Turn Lane with 135 foot Taper	No Right Turn Lane Required	NO			
Westbound Left	165-foot Left Turn Lane with 135-foot Taper	No Left Turn Lane Required	NO			

4.3.2 Fort Pickett Access Gate Analysis

Access to Fort Pickett would continue to be controlled by two gates in the No Action Alternative. The one percent per year compounded growth rate was applied to the existing counts for both lanes, using the lane distribution shown in the existing volumes. Under the No Action Alternative in 2018, both the Main Gate and the West Gate would accommodate morning and afternoon peak-hour volumes below the 375 vphpl threshold that would necessitate more than one guard per lane.

Table 4-3. Summary of Gate Analysis – No Action Alternative (Year 2018)

Main Gate (Military Road)				West Gate (West Entrance Road)			
A.M. Peak-hour (6:30-7:30 a.m.)		P.M. Peak-hour (4:00-5:00 p.m.)		A.M. Peak-hour (6:30-7:30 a.m.)		P.M. Peak-hour (4:00-5:00 p.m.)	
Lane 1	Lane 2						
vph	vph	vph	vph	vph	vph	vph	vph
192	123	15	14	64	79	14	14
Guards	Guards	Guards	Guards	Guards	Guards	Guards	Guards
1	1	1	1	1	1	1	1

Note:

vph = vehicles per hour.

4.3.3 Intersection Control Warrants

Because none of the traffic movements at any of the intersections are characterized by LOS E or LOS F, no traffic signal warrant analysis was performed. As was shown in Table 4-1, all unsignalized intersections would operate at LOS C or better during both peak hours in 2018; therefore, traffic signal installation would not be needed to address any projected future intersection delay under the No Action Alternative.

Chapter 5 **PROJECT TRAFFIC**

The following paragraphs describe future traffic conditions that are expected to occur at the time the Proposed Action is built and operating. As discussed in Section 1.2, all training venues fundamental to the FASTC training program would be in place, and 90 percent of the training program would be operational by the year 2018. By 2020, 100 percent of training would be operational. This TIA evaluates the full buildout of the Proposed Action by the year 2018. This approach increases the Proposed Action's year 2018 traffic generation by 10 percent to capture the 100 percent of project traffic. The Proposed Action's traffic impacts were determined based on the incremental effect of each option relative to the No Action Alternative.

This section describes the key assumptions and methods used to estimate the traffic generation, trip distribution, and traffic assignment of the two access options. The Proposed Action would affect traffic patterns in the following ways:

- 1. Additional passenger car and bus trips would be added to intersections throughout the ROI as the result of commuting trips by instructors and staff and the transport of students to and from area hotels;
- 2. Minivans would be driven from various locations to the Core Area in order to transport students to training venues;
- 3. As discussed in Section 1.2, a one-way Entry Loop would be constructed to the west of Dearing Avenue to provide a connection to the Core Area;
- 4. Additional minivan trips would be added to project access points along Dearing Avenue (only) as students are transported from the Core Area to training venues; and
- 5. For Option B (only), establishing a new access gate on Dearing Avenue is expected to cause the redistribution of existing trips from the Main Gate to the proposed Dearing Avenue gate.

The Entry Loop would form two intersections with Dearing Avenue, which are referred to in Chapter 6 as Entry Loop (North) and Entry Loop (South). These intersections are numbered 16 and 17 in the figures that follow. A third intersection, Foley Road/Dearing Avenue, would provide access to and from proposed training venues in the 21/20 Parcel (see text below). This location is labeled as intersection 18 in the figures that follow.

5.1 TRAFFIC GENERATION

The Proposed Action's traffic generation was estimated based on information provided by the GSA and DOS (GSA/DOS 2014a, 2014b) and using trip generation rates published by the Institute of Transportation Engineers (ITE) (ITE 2012). **Table 5-1** presents the traffic generation data, assumptions and calculations. In order to provide a conservative estimate, the bus and minivan trips estimated in the Master Plan Update were increased by approximately 9 percent to reflect the possibility that not all buses and minivans would be fully occupied by students during each trip. As shown in Table 5-1, the Proposed Action would add 240 trips (182 inbound and 58 outbound) to ROI intersections during the morning peak hour, and 233 (65 inbound and 168 outbound) in the afternoon peak hour. Minivan trips between the Core Area and FASTC training venues are summarized in the row labelled "Internal Shuttle Trips" in Table 5-1. Minivan trips would include 24 outbound trips from the Core Area in the morning

peak hour, and 24 inbound trips to the Core Area in the afternoon peak hour. As discussed below in Section 5.2, only a portion of these trips would occur outside of the FASTC facility, and these trips would be limited to project access points on Dearing Avenue.

5.2 Trip Distribution

Project traffic was distributed throughout the ROI based on the distribution pattern provided in the 2012 TIA and supplemental information provided by GSA/DOS (2014b). The regional distribution project traffic is as follows:

- 75 percent to/from the northeast via U.S. Route 460 (Richmond and Washington DC);
- 2 percent to/from the east via Darvills Road;
- 2 percent to/from the south via Brunswick Road (VA Route 46);
- 2 percent to/from the southwest via Kenbridge Road (VA Route 40);
- 14 percent to/from the west and northwest via US Route 460 (i.e., the towns of Farmville, Burkeville, and Crewe); and
- 5 percent to/from within the Town of Blackstone.

Under Option A, all project trips would enter Fort Pickett via the Main Gate and the West Gate. Based on the origins and destinations of project traffic, it is assumed that approximately 90 percent of project trips would enter the installation at the Main Gate, while approximately 10 percent would enter via the West Gate. Under Option B, only a limited amount of project traffic would enter Fort Pickett using these two existing gates. It is assumed that approximately 80 percent of trips under Option B, including all bus and minivan trips, would enter Fort Pickett using the proposed Dearing Avenue gate. The remaining 20 percent, consisting of passenger vehicles, would be evenly split between the Main Gate and the West Gate (i.e., approximately 10 percent entering at each of these two gates).

Internal shuttle trips between the Core Area and training venues would be split between LRA Parcel 9 and the 21/20 Parcel. Based on the number of venues within each parcel, it is assumed that 55 percent of internal shuttle trips would be between the Core Area and LRA Parcel 9. These trips would be entirely within the FASTC boundary. The remaining 45 percent of internal shuttle trips would travel between the Core Area and the 21/20 Parcel. Outbound trips destined for the 21/20 Parcel would exit the Entry Loop at Dearing Avenue, and proceed to the north on Dearing Avenue for a short distance before turning right onto Foley Road to enter the 21/20 Parcel. These external trips are accounted for in the Proposed Action's traffic assignment.

Table 5-1. Traffic Generation Summary

		Daily	A.M. Peak Hour				P.M. Peak Hour		
Trip Category	Amount	Daily Trip Rate ^(a)	Trips	In	Out	Total	In	Out	Total
	External Trip	s to and from FASTC							
Commuting Trips for Instructors and Staff	339 employees	3.3 / employee	1,125	143	20	163	27	129	156
Transport of Students from Area Hotels (buses) ^(b)	600 students	0.09 / student	60	15	15	30	15	15	30
Movement of Minivans to and from FASTC ^(c)	24 minivans	4 / minivan	96	24	24	48	24	24	48
	Total:		1,281	182	58	240	65	168	233
	Shuttle Trips ^(d)								
Transport of Students from the Core Area (minivans) (e)	600 students	0.07 / student	48	0	24	24	24	0	24

Notes:

⁽a) Trip generation rates and directional splits for Instructors and Staff taken from Institute of Transportation Engineers' Trip Generation (ITE 2012) for Land Use Code 710. Trip rates for transporting students provided by GSA/DOS (2014a). External bus and minivan trips increased by 8.6 percent to reflect potential seat vacancies.

⁽b) Transport of students between area hotels and FASTC Core Area to be provided by buses having a maximum capacity of 47 students per bus (GSA/DOS 2014a).

⁽c) Minivans would be positioned at the Core Area to transport students after they arrive by bus, and to return the students to the Core Area after training each day.

⁽d) Internal shuttle trips would travel between the Core Area and training venues on the in LRA Parcel 9. Trips to and from the 21/20 Parcel would traverse the Dearing Avenue intersections with the internal Entry Loop and Foley Road. Trips to and from LRA Parcel would occur entirely within the FASTC boundary.

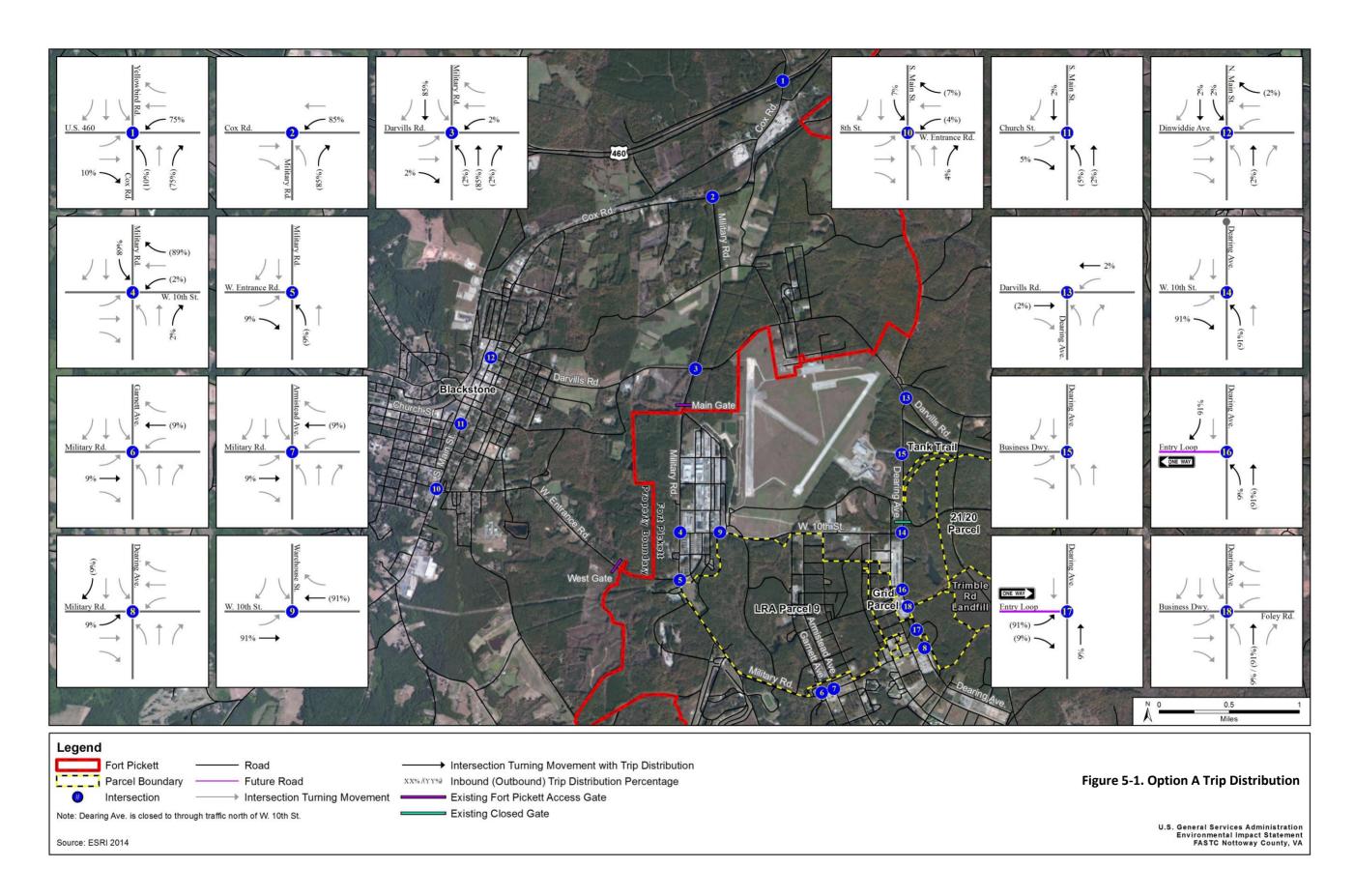
⁽e) Transport of students between the FASTC Core Area and training venues to be provided by minivans having a maximum capacity of 29 students per minivan (GSA/DOS 2014a).

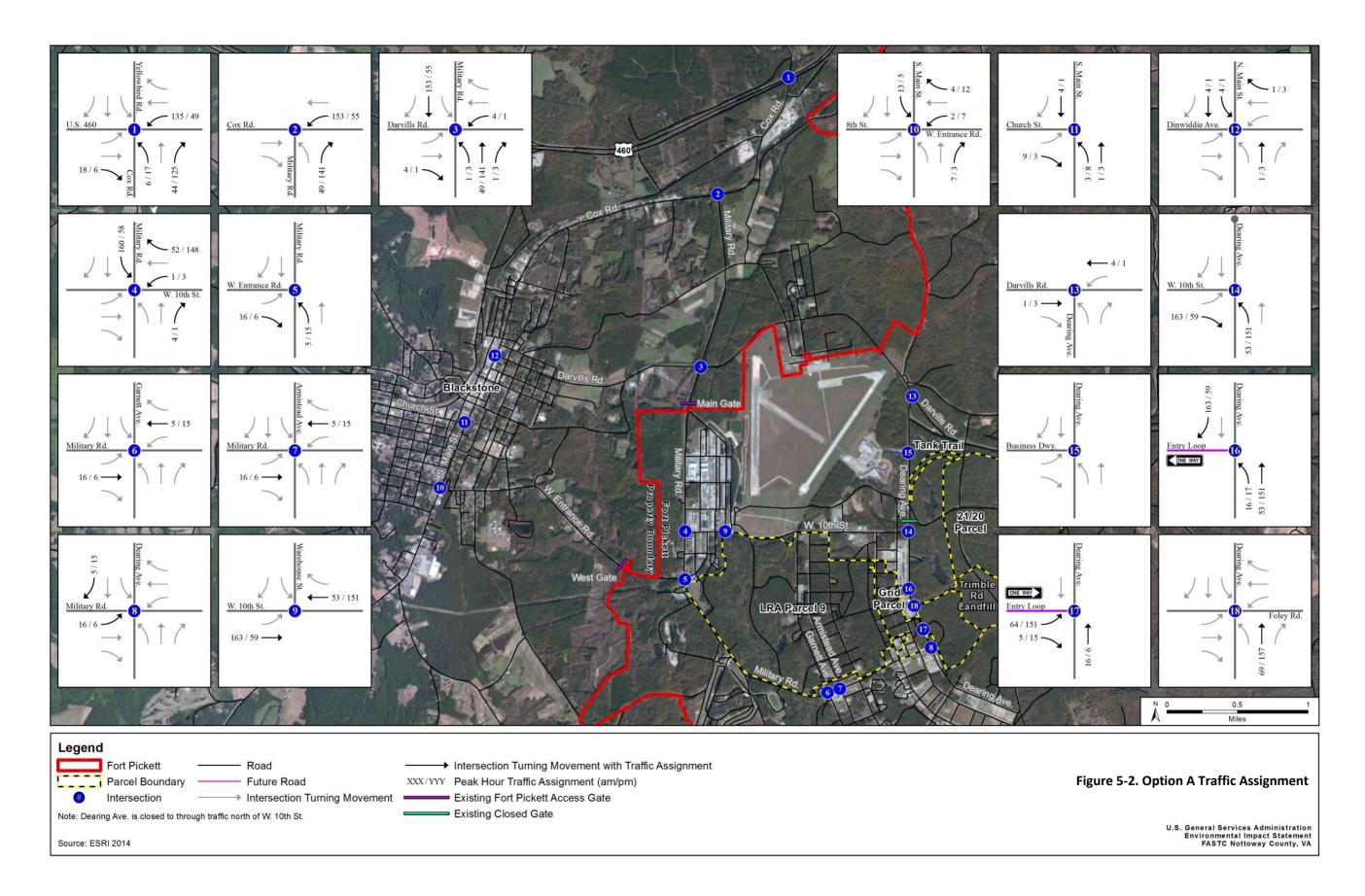
5.3 OPTION A TRAFFIC VOLUMES

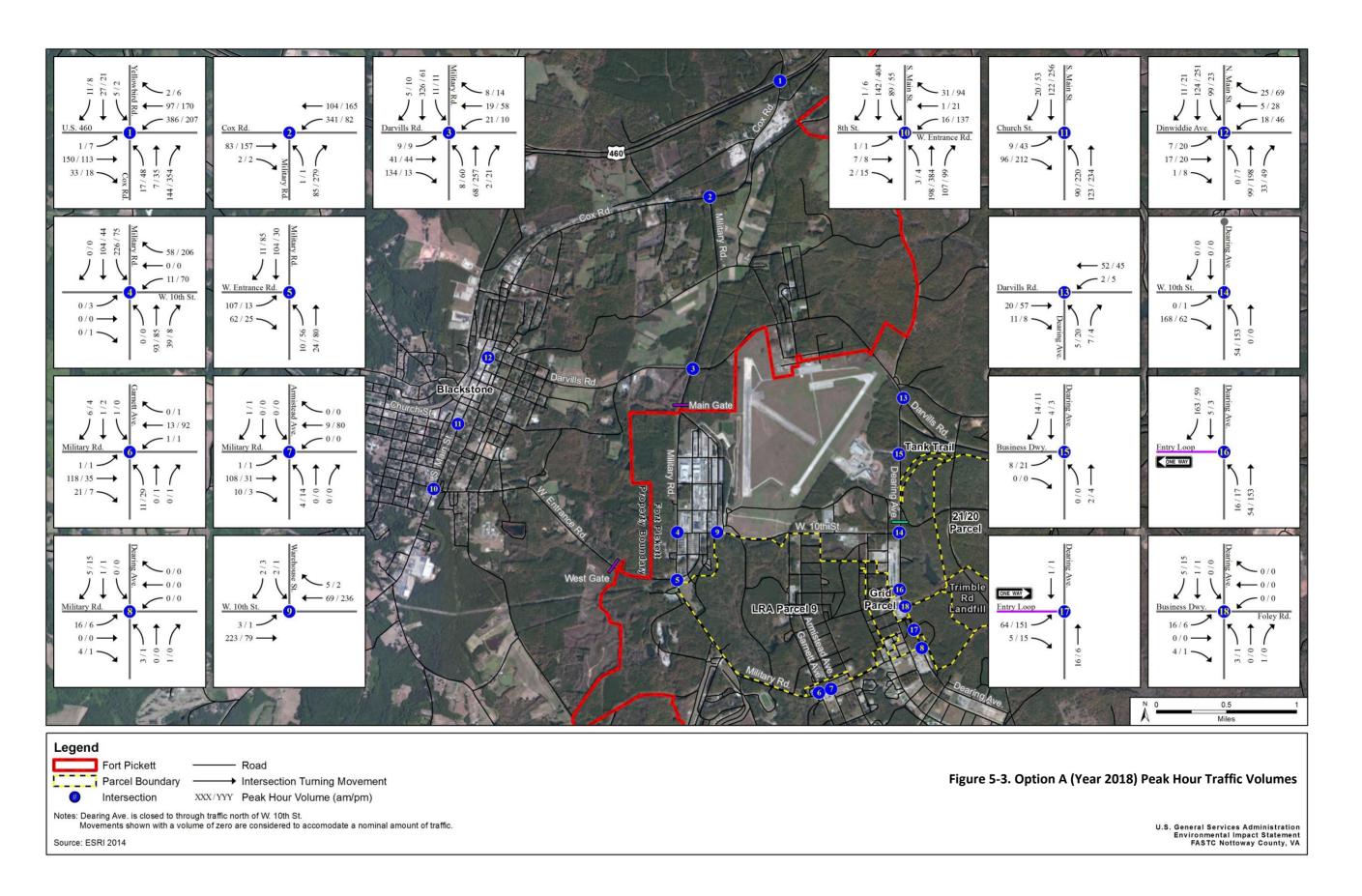
Figure 5-1 presents the trip distribution pattern for Option A. **Figure 5-2** depicts the assignment of project-related trips under this scenario. The trips shown in Figure 5-2 include both external trips to and from FASTC (i.e., commuting trips by instructors and staff, transport of students to and from area hotels, and the movement of minivans to and from the Core Area) and internal shuttle trips between the Core Area and training venues. The addition of trips from Option A to No Action Alternative volumes is shown in **Figure 5-3**.

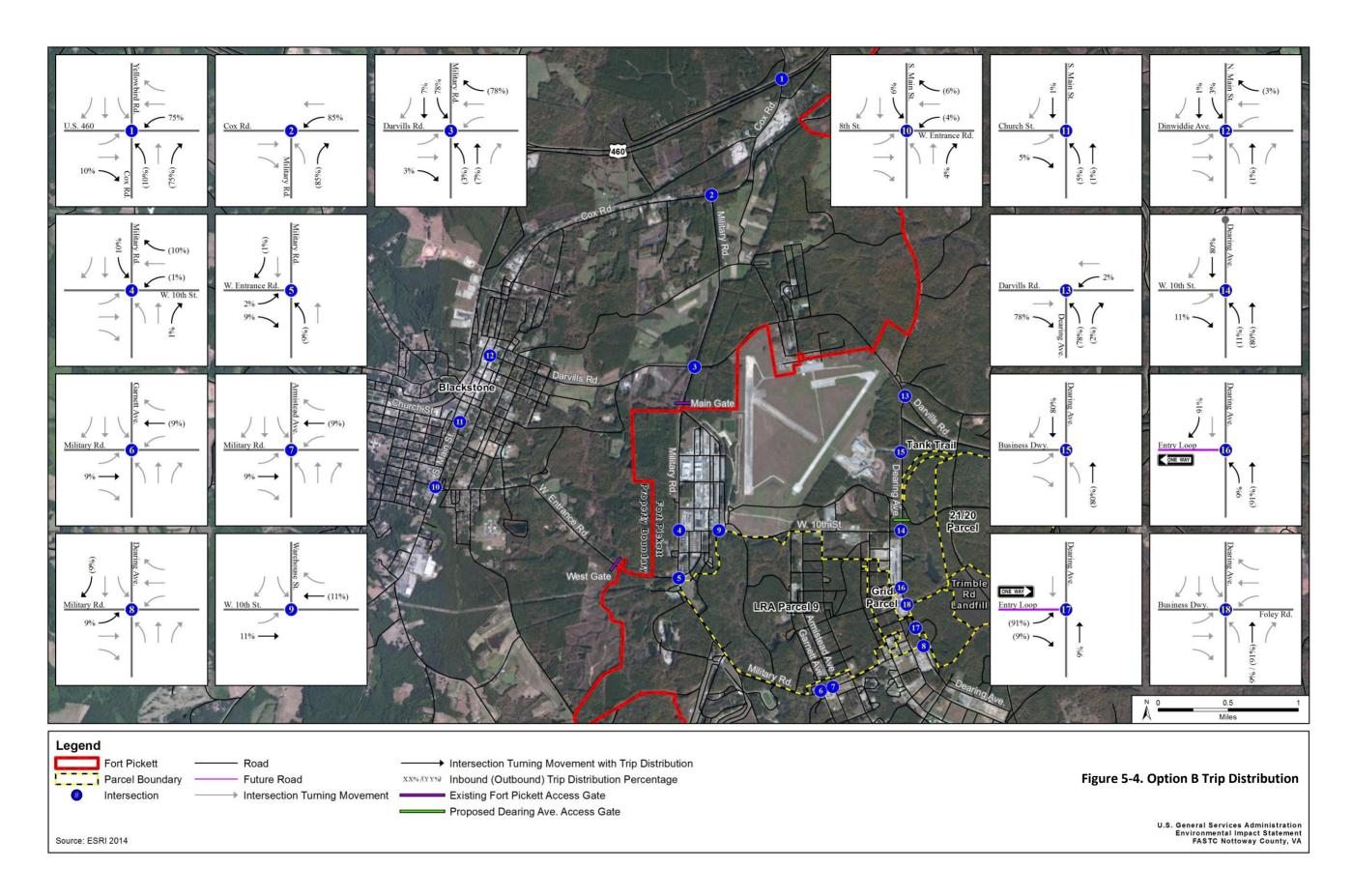
5.4 OPTION B TRAFFIC VOLUMES

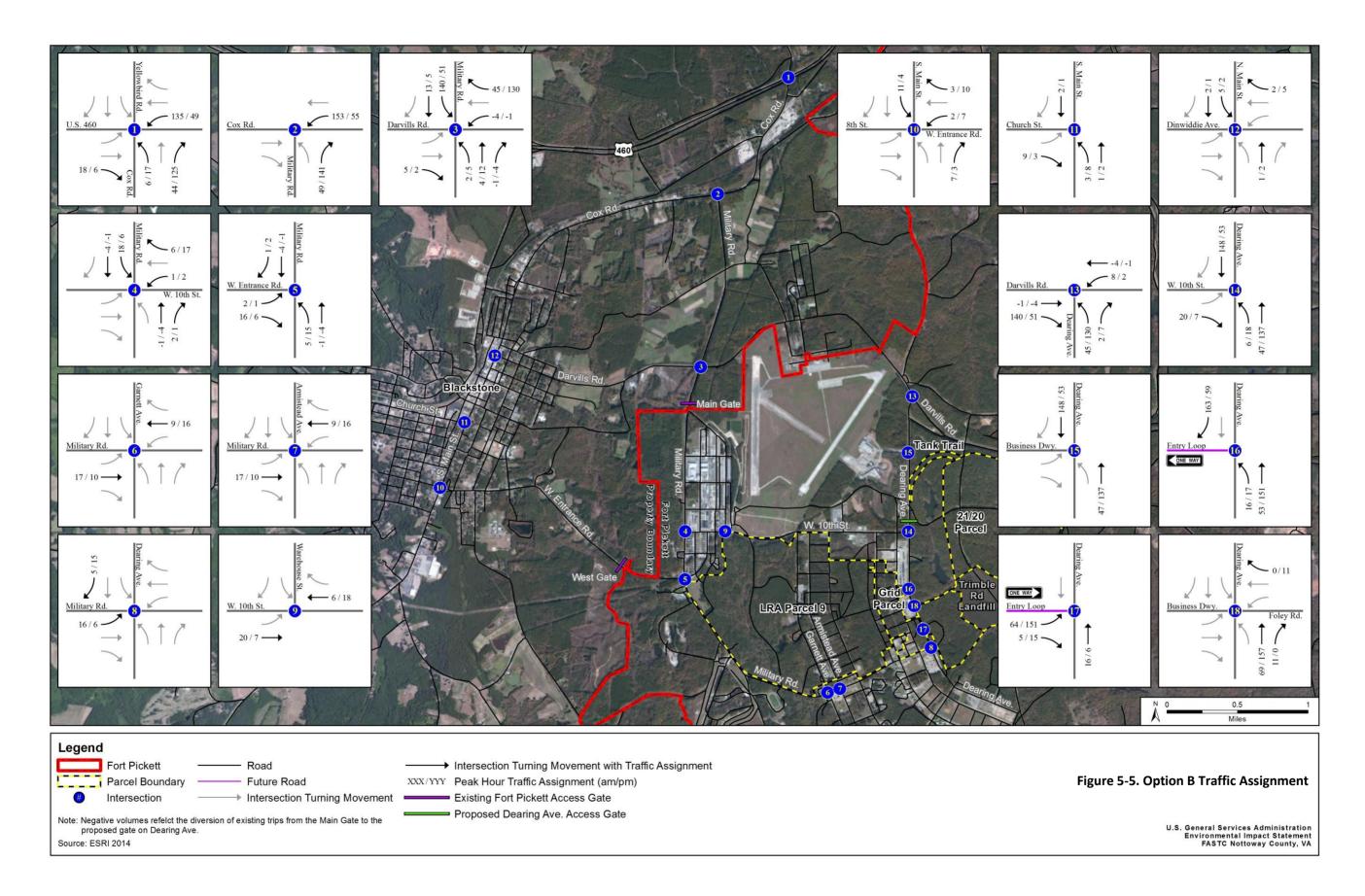
Figure 5-4 illustrates Option B's trip distribution pattern, while **Figure 5-5** presents Option B's traffic assignment. In addition to external trips to and from FASTC and internal shuttle trips, Figure 5-5 also includes the redistribution of existing trips that would be expected due to the establishment of a new access gate on Dearing Avenue. **Figure 5-6** shows the combination of Option B trips and No Action Alternative trips.

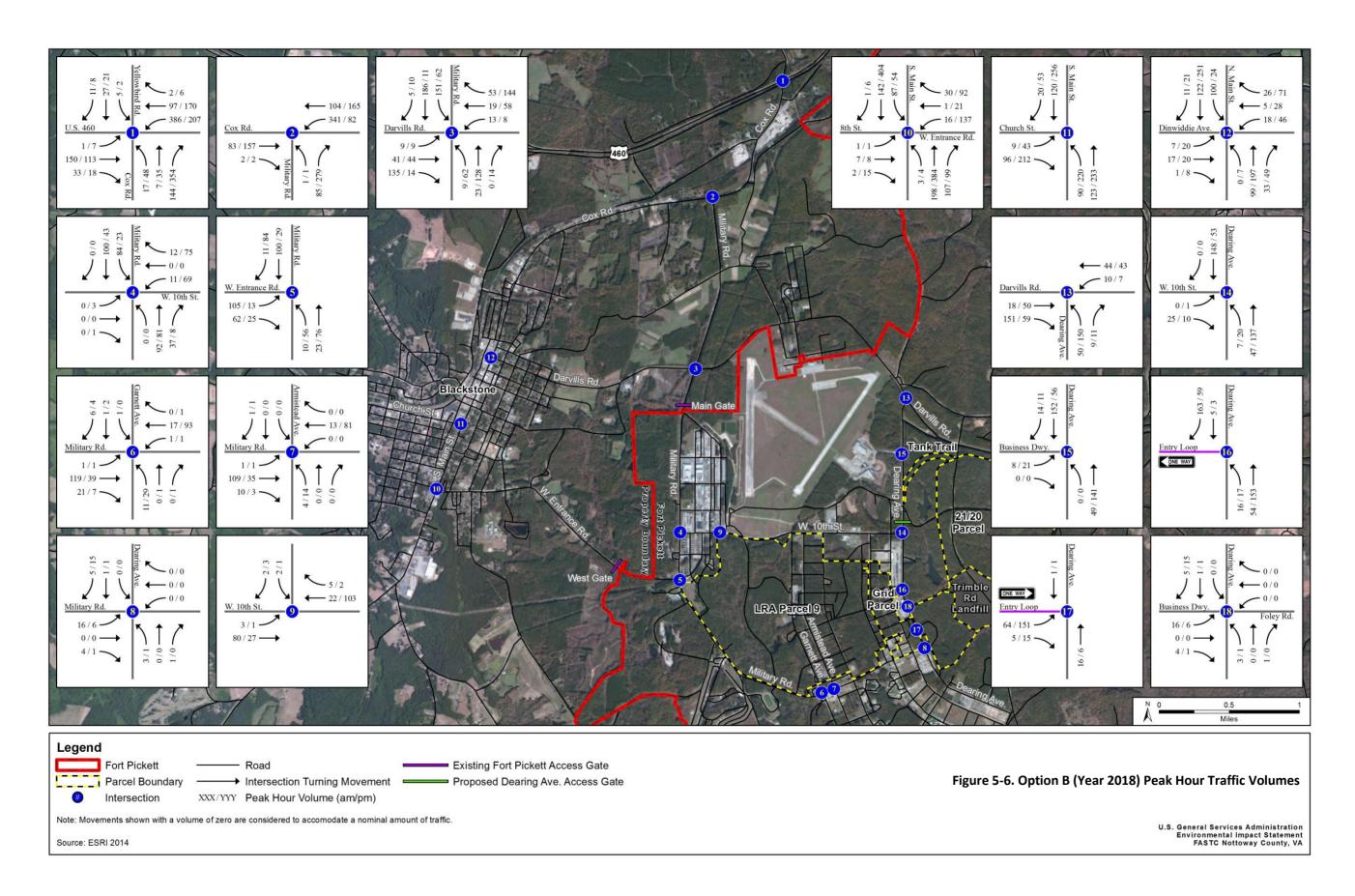












Chapter 6 **PROJECT IMPACTS**

6.1 BUILD ALTERNATIVE 3, ACCESS OPTION A

6.1.1 Intersection LOS

As shown in **Table 6-1**, with the addition of project-related traffic (i.e., instructor and staff commuting trips, transport of students from area hotels, movement of minivans to and from the Core Area, and internal shuttle trips), all intersections would be characterized by LOS C or better conditions during both peak hours. Because the Proposed Action would not cause any traffic movement to deteriorate from LOS C or better to LOS D or worse, Option A would not result in any significant traffic impact. Refer to Attachment C for intersection worksheets.

Table 6-1. Summary of Intersection LOS – Build Alternative 3, Option A (Year 2018)

	lutava atiava	Traffic	Traffic Movement ^(a)	A.M. Pe	ak Hour		ak Hour
	Intersection	Control	Traffic Movement	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
	U.S. Route 460 (W		NB Left/Through/Right	14.5	В	17.9	С
1	Colonial Trail Hwy)/	TWSC	EB Left	8.7	Α	7.6	Α
-	Cox Rd/Yellowbird Rd	10050	WB Left	8.8	Α	8.0	Α
	COX Nu/ Tellowbild Nu		SB Left/Through/Right	21.5	С	14.2	В
2	Cox Rd (U.S. Route	OWSC	NB Left/Right	9.6	Α	11.5	В
2	460 Bus)/Military Rd	UWSC	WB Left	8.2	Α	8.1	Α
			NB Left	14.6	В	10.8	В
			NB Through	10.7	В	13.3	В
3	Darvills Rd (VA Route	TWSC	NB Right	8.6	Α	8.6	Α
5	40)/Military Rd	10050	EB Left	7.3	Α	7.4	Α
			WB Left	7.3	Α	7.5	Α
			SB Left/Right	14.6	В	11.6	В
	4 W 10th St/Military Rd		WB Left/Through/Right	11.2	В	11.7	В
4		TWSC	EB Left/Through/Right	0.0	Α	12.7	В
			SB Left	8.0	Α	7.8	Α
5	West Entrance	OWSC	NB Left	7.6	Α	7.6	Α
J	Rd/Military Rd	OWSC	EB Left/Right	10.4	В	9.5	Α
			NB Left/Through/Right	9.8	Α	9.6	Α
6	Military Rd/Garnett	TWSC	EB Left	7.3	Α	7.7	Α
U	Ave	1 4430	WB Left	7.5	Α	7.3	Α
			SB Left/Through/Right	8.9	Α	9.2	Α
	Military		NB Left/Through/Right	9.3	Α	9.3	Α
7	Rd/Armistead Ave	TWSC	EB Left	7.3	Α	7.6	Α
	Rd/Armistead Ave		SB Left/Through/Right	8.6	Α	8.8	Α
8	Military Rd/Dearing	TWSC	NB Left	7.2	Α	7.2	Α
8	Ave	1 4430	EB Left/Through/Right	8.6	Α	0.0	Α
9	W 10th	OWSC	EB Left	8.0	Α	7.7	Α
9	St/Warehouse St	UVVSC	SB Left/Right	9.6	Α	9.9	Α

		Traffic	- cc - a .(a)	A.M. Pe	ak Hour	P.M. Pe	ak Hour
	Intersection	Control	Traffic Movement ^(a)	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
			Overall (all movements)	15.3	В	18.7	В
	8th St/West Entrance		EB Left/Through/Right	21.8	С	30.4	С
10	Rd/S Main St	Signal	WB Left/Through/Right	20.1	С	29.5	С
	ray 5 iviairi 50		NB Left/Through/Right	18.6	В	19.8	В
			SB Left/Right	9.7	Α	10.8	В
	Church St (U.S. Route		Overall (all movements)	8.5	Α	11.0	В
	460 Bus)/S Main St	Signal	EB Left/Right	12.1	В	12.8	В
11	11 460 Bus)/S Main St (U.S. 460 Bus/VA		NB Left/Through	5.5	Α	7.5	Α
	Route 40)		SB Through/Right	10.4	В	14.7	В
			Overall (all movements)	17.3	В	16.2	В
	Dinwiddie Ave (VA		EB Left/Through/Right	22.1	С	22.4	С
12	Route 40)/N Main St (U.S. Route 460/VA 40)	Signal	WB Left/Through/Right	25.4	С	24.1	С
			NB Left/Through/Right	21.2	С	17.1	В
	40)		SB Left/Through/Right	13.0	В	10.5	В
13	Darvills Rd (VA Route	OWSC	NB Left/Right	8.7	Α	9.2	Α
13	40)/Dearing Ave	UWSC	WB Left	7.3	Α	7.3	Α
14	W 10th St/Dearing Ave	OWSC	(d)	(d)	(d)	(d)	(d)
15	Business Driveway/ Dearing Ave	OWSC	EB Left/Right	8.6	Α	8.7	Α
16	Entry Loop (North)/Dearing Ave	None	(d)	(d)	(d)	(d)	(d)
17	Entry Loop (South)/Dearing Ave	OWSC	EB Left/Right	8.9	Α	9.3	А
18	Foley Rd/Dearing Ave	TWSC	EB Left/Through/Right	8.7	Α	9.2	Α
10	Toley Na/Dearing Ave	10050	WB Left/Through/Right	0.0	Α	9.2	Α

Notes:

Bus = Business Route; EB = eastbound; LOS = Level of Service; NB = northbound; OWSC = one-way stop control; SB = southbound; TWSC = two-way stop control; WB = Westbound.

6.1.2 Other Traffic Analyses

6.1.2.1 Turn Lane Analysis

A turn lane analysis for projected conditions under Option A was performed using the methods described in Chapter 2. The results of the analysis are summarized in **Table 6-2**. The data tables and charts used to determine turn lane warrants are provided in Attachment D. Based on this analysis, the existing turning lane storage would be less than VDOT design standards and turning lane improvements may be warranted at the following intersection:

• U.S. Route 460 westbound left at Cox Road (intersection 1).

The turn lane treatment at U.S. Route 460/Cox Road would be triggered by the addition of project-related traffic. However, the turn lane improvements at Cox Road/Military Road and Darvills

⁽a) LOS is provided only for movements that would experience delay during one or both peak hours.

⁽b) Delay is measured in seconds per vehicle.

⁽c) LOS calculations are based on HCM (TRB 2010) methods, and were performed using Synchro 8.

⁽d) W 10th St/Dearing Ave (intersection 14) and Entry Loop (North)/Dearing Ave (intersection 16) were not analyzed because they have no conflicting movements.

Road/Military Road listed in Table 6-2 would be necessary under the No Action Alternative, and are not triggered by the Proposed Action.

Table 6-2. Summary of Turn Lane Analyses – Build Alternative 3, Option A (Year 2018)

Intersection and Movement	Existing Turn Lane Treatment	Turn Lane Treatment Required per VDOT Policy	Additional Treatment Required?
U.S. Route 460 at Cox Rd (i	ntersection 1)		
Eastbound Left	125-foot Left Turn Lane with 75-foot Taper	No Left Turn Lane Required	NO
Eastbound Right	50-foot Right Turn Lane with 125-foot Taper	No Right Turn Lane Required	NO
Westbound Left	150-foot Left Turn Lane with 150-footTaper	Minimum 250-foot Left Turn Lane with Minimum 200-foot Taper	YES
Westbound Right	100-foot Right Turn Lane with 50-foot Taper	No Right Turn Lane Required	NO
Cox Rd at Military Rd (inter	section 2)		
Eastbound Right	None	No Right Turn Lane Required	NO
Westbound Left	None	Minimum 200-foot Left Turn Lane with Minimum 200-foot Taper	YES ^(a)
Darvills Rd at Military Rd (in	ntersection 3)		
Eastbound Left	None	No Left Turn Lane Required	NO
Eastbound Right	50-foot Right Turn Lane with 50-foot Taper	Minimum 200-foot Right Turn Lane with Minimum 200-foot Taper	YES ^(a)
Westbound Left	None	No Left Turn Lane Required	NO
Westbound Right	None	No Right Turn Lane Required	NO
Northbound Left	150-foot Left Turn Lane with 50-foot Taper	No Left Turn Lane Required	NO
Northbound Right	25-foot Right Turn Lane with 50-foot Taper	No Right Turn Lane Required	NO
Southbound Left	None	No Left Turn Lane Required	NO
Southbound Right	None	No Right Turn Lane Required	NO

Note:

6.1.2.2 Fort Pickett Access Gate Analysis

Under Option A, access to Fort Pickett would continue to be controlled by two gates, the Main Gate and the West Gate. Each gate has two inbound lanes and one guard per lane. **Table 6-3** summarizes traffic volumes and staffing requirements at both gates under Option A. As shown in this table, both the Main Gate and the West Gate would have peak hour volumes per lane below the 375 vphpl threshold that would necessitate more than one guard per lane under Option A. Therefore, no additional personnel would be required at either gate.

⁽a) Additional turn lane treatment is warranted under the No Action Alternative, and is not caused by the addition of Option A traffic.

Table 6-3. Summary of Gate Analysis – Build Alternative 3, Option A (Year 2018)

	Main Gate (N	Military Road)		v	Vest Gate (Wes	t Entrance Road	(k	
A.M. Peak-hour (6:30-7:30 a.m.)		P.M. Pe (4:00-5:	ak-hour 00 p.m.)	_	ak-hour 30 a.m.)	P.M. Peak-hour (4:00-5:00 p.m.)		
Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	
vph	vph	vph	vph	vph	vph	vph	vph	
290	188	44	42	74	92	18	17	
Guards	Guards	Guards	Guards	Guards	Guards	Guards	Guards	
1	1	1	1	1	1	1	1	

Note:

vph = vehicles per hour.

6.1.2.3 Intersection Control Warrants

Because none of the traffic movements at any of the intersections are characterized by LOS E or F under Option A, no traffic signal warrant analysis was performed. As shown above in Table 6-1, all intersection traffic movements operate at LOS C or better during both peak hours; therefore, traffic signal installation is not needed to address any projected future intersection delay caused by project-related traffic or background traffic growth.

6.1.2.4 Site Access and Internal Circulation

As discussed in Section 1.2, access to and from the site would be provided primarily via Dearing Avenue, and a one-way loop circulation road (i.e., Entry Loop) would be constructed to the west of Dearing Avenue to provide a connection to the Core Area. Traffic on the Entry Loop would flow from north to south. The Core Area would function as an intermodal transfer facility, and the Entry Loop would accommodate a mixture of vehicles, including personal vehicles, buses, and minivans. Also, there would be substantial pedestrian activity at the Core Area, as students would transfer from buses to minivans at this location. The following traffic circulation measures would avoid potential transportation-related effects:

1. It is recommended that the Entry Loop be designed to accommodate and efficiently process vehicles approaching the Core Area. As feasible, passenger cars traveling to and from the surface parking lot should be separated from buses, minivans, and pedestrians. Where queues may form, sufficient storage should be provided to avoid blocking adjacent lanes and to prevent vehicles from stacking onto Dearing Avenue. To facilitate the transfer of students, it is recommended that minivans be scheduled to arrive and park before buses in the morning, while buses should be in place before the arrival of minivans in the afternoon. Signage, pavement markings, pedestrian islands and other design elements should be considered to accommodate safe and efficient pedestrian movement at the Core Area.

6.2 Build Alternative 3, Access Option B

6.2.1 Intersection LOS

Table 6-4 summarizes intersection LOS with the addition of project-related traffic associated with Option B. This includes externally-oriented trips (i.e., commuting trips by instructors and staff, transport of students from area hotels, and movement of minivans to and from the Core Area), internal shuttle trips, and the redistribution of existing trips from the Main Gate to the proposed Dearing Avenue gate. As shown in this table, most traffic movements would operate at LOS A or B, and several movements would operate at LOS C conditions during both peak hours. Because the Proposed Action would not cause LOS to drop from LOS C or better to LOS D or worse, Option B would have no significant traffic impact. Refer to Attachment C for intersection worksheets.

Table 6-4. Summary of Intersection LOS – Build Alternative 3, Option B (Year 2018)

		Traffic	_ (a)	A.M. Pe	ak Hour	P.M. Pe	ak Hour
	Intersection	Control	Traffic Movement ^(a)	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
	II.S. Poute 460 (M		NB Left/Through/Right	14.5	В	17.9	С
	U.S. Route 460 (W Colonial Trail Hwy)/		EB Left	8.7	Α	7.6	Α
1 Colonial Trail Hwy)/ Cox Rd/Yellowbird Rd		TWSC	WB Left	8.8	Α	8.0	Α
	Cox Ra/Yellowbira Ra		SB Left/Through/Right	21.5	С	14.2	В
	Cox Rd (U.S. Route	014/66	NB Left/Right	9.6	В	11.5	В
2	460 Bus)/Military Rd	OWSC	WB Left	8.2	Α	8.1	Α
			NB Left	11.8	В	10.8	В
			NB Through	10.5	В	12.9	В
_	Darvills Rd (VA Route	TWSC	NB Right	0.0	Α	8.6	Α
3	40)/Military Rd	TVV3C	EB Left	7.4	Α	7.7	Α
			WB Left	7.3	Α	7.5	Α
			SB Left/Right	14.5	В	14.0	В
			WB Left/Through/Right	10.7	В	10.2	В
4	4 W 10th St/Military Rd	TWSC	EB Left/Through/Right	0.0	Α	10.1	В
	W 10th St/Willitary Ru 1WSt		SB Left	7.7	Α	7.7	Α
5	West Entrance	OWSC	NB Left	7.5	Α	7.6	Α
Э	Rd/Military Rd	UWSC	EB Left/Right	10.3	В	9.4	Α
			NB Left/Through/Right	9.8	Α	9.7	Α
_	Military Rd/Garnett	TMCC	EB Left	7.3	Α	7.4	Α
6	Ave	TWSC	WB Left	7.5	Α	7.3	Α
			SB Left/Through/Right	8.8	Α	9.2	Α
	Military		NB Left/Through/Right	9.4	Α	9.4	А
7	Military	TWSC	EB Left	7.2	Α	7.4	Α
	Rd/Armistead Ave		SB Left/Through/Right	8.4	Α	8.7	Α
8	Military Rd/Dearing	TMCC	NB Left	7.2	Α	7.2	Α
8	Ave TWSC		EB Left/Through/Right	8.6	Α	8.8	Α
0	W 10th	OWSC	EB Left	7.9	Α	7.4	А
9	St/Warehouse St	UWSC	SB Left/Right	8.8	Α	9.0	Α

		Traffic	_ (a)	A.M. Pe	ak Hour	P.M. Pe	ak Hour
	Intersection	Control	Traffic Movement ^(a)	Delay ^(b)	LOS ^(c)	Delay ^(b)	LOS ^(c)
			Overall (all movements)	15.3	В	18.6	В
	Oth Ct // March Forture or a		EB Left/Through/Right	21.8	С	30.4	С
10	8th St/West Entrance Rd/S Main St	Signal	WB Left/Through/Right	20.1	С	29.5	С
	Ru/S Ividili St		NB Left/Through/Right	18.6	В	19.8	В
			SB Left/Right	9.7	Α	10.7	В
	Church St (U.S. Route		Overall (all movements)	8.5	Α	11.0	В
11	460 Bus)/S Main St	Cianal	EB Left/Right	12.1	В	12.8	В
11	(U.S. Route 460	Signal	NB Left/Through	5.4	Α	7.5	Α
	Bus/VA Route 40)		SB Through/Right	10.4	В	14.7	В
			Overall (all movements)	17.4	В	16.2	В
	Dinwiddie Ave (VA Route 40)/N Main St (U.S. Route 460/VA Route 40)		EB Left/Through/Right	22.2	С	22.4	С
12		Signal	WB Left/Through/Right	25.4	С	24.3	С
			NB Left/Through/Right	21.3	С	17.2	В
	Noute 40)		SB Left/Through/Right	13.0	В	10.5	В
13	Darvills Rd (VA Route	OWSC	NB Left/Right	9.2	Α	10.1	В
13	40)/Dearing Ave	UWSC	WB Left	7.3	Α	7.3	Α
14	W 10th St/Dearing	OWSC	EB Left/Right	7.6	Α	7.4	Α
14	Ave	UWSC	NB Left	9.2	Α	8.7	Α
15	Business Driveway/ Dearing Ave	OWSC	EB Left/Right	9.8	А	9.8	Α
16	Entry Loop (North)/Dearing Ave	None	(d)	(d)	(d)	(d)	(d)
17	Entry Loop (South)/Dearing Ave	OWSC	EB Left/Right	8.9	Α	9.3	Α
18	Foley Rd/Dearing Ave	TWSC	EB Left/Through/Right	8.7	Α	9.2	Α
10	i oley ku/Dearing Ave	1 4430	WB Left/Through/Right	0.0	Α	9.2	Α

Notes:

Bus = Business Route; EB = eastbound; LOS = Level of Service; NB = northbound; OWSC = one-way stop control; SB = southbound; TWSC = two-way stop control; WB = Westbound.

6.2.2 Other Traffic Analyses

6.2.2.1 Turn Lane Analysis

A turn lane analysis for projected conditions under Option B was performed using the methods described in Chapter 2. The results of the analysis are summarized in **Table 6-5**. Refer to Attachment D for the data tables and charts used in this analysis. Based on this analysis, the existing turning lane storage would be less than VDOT design standards and turning lane improvements may be warranted at the following three intersections:

- U.S. Route 460 westbound left at Cox Road (intersection 1);
- Darvills Road westbound right at Military Road (intersection 3); and
- Darvills Road eastbound right at Dearing Avenue (intersection 13).

⁽a) LOS is provided only for movements that would experience delay during one or both peak hours.

⁽b) Delay is measured in seconds per vehicle.

⁽c) LOS calculations are based on HCM (TRB 2010) methods, and were performed using Synchro 8.

⁽d) Entry Loop (North)/Dearing Ave (intersection 16) was not analyzed because it has no conflicting movements.

The turn lane treatment at U.S. Route 460/Cox Road (westbound left), the westbound right turn treatment at Darvills Road/Military Road, and the eastbound right turn treatment at Darvills Road/Dearing Avenue would be triggered by the addition of project-related traffic. However, the turn lane improvements listed in Table 6-5 at Cox Road/Military Road (westbound left) and the eastbound right at Darvills Road/Military Road would be necessary under the No Action Alternative, and are not triggered by the Proposed Action.

Table 6-5. Summary of Turn Lane Analyses – Build Alternative 3, Option B (Year 2018)

	initially of Farm Earlier and	yses – Build Alternative 3, Option B	(.ca. 1010)
Intersection and Movement	Existing Turn Lane Treatment	Turn Lane Treatment Required per VDOT Policy	Additional Treatment Required?
U.S. Route 460 at Cox Ro	(intersection 1)		
Eastbound Left	125-foot Left Turn Lane with 75-foot Taper	No Left Turn Lane Required	NO
Eastbound Right	50-foot Right Turn Lane with 125-foot Taper	No Right Turn Lane Required	NO
Westbound Left	150-foot Left Turn Lane with 150-footTaper	Minimum 250-foot Left Turn Lane with Minimum 200-foot Taper	YES
Westbound Right	100-foot Right Turn Lane with 50-foot Taper	No Right Turn Lane Required	NO
Cox Rd at Military Rd (inter	rsection 2)		
Eastbound Right	None	No Right Turn Lane Required	NO
Westbound Left	None	Minimum 200-foot Left Turn Lane with Minimum 200-foot Taper	YES ^(a)
Darvills Rd at Military Rd (in	ntersection 3)		
Eastbound Left	None	No Left Turn Lane Required	NO
Eastbound Right	50-foot Right Turn Lane with 50-foot Taper	Minimum 200-foot Right Turn Lane with Minimum 200-foot Taper	YES ^(a)
Westbound Left	None	No Left Turn Lane Required	NO
Westbound Right	None	Minimum 100-foot Right Turn Lane with Minimum 200-foot Taper	YES
Northbound Left	150-foot Left Turn Lane with 50-foot Taper	No Left Turn Lane Required	NO
Northbound Right	25-foot Right Turn Lane with 50-foot Taper	No Right Turn Lane Required	NO
Southbound Left	None	No Left Turn Lane Required	NO
Southbound Right	None	No Right Turn Lane Required	NO
Darvills Rd at Dearing Ave ((intersection 13)		
Eastbound Right	110-foot Right Turn Lane and 135-foot Taper	Minimum 200-foot Right Turn Lane with Minimum 200-foot Taper	YES
Westbound Left	165-foot Left Turn Lane with 135-foot Taper	No Left Turn Lane Required	NO

Note:

⁽a) Additional turn lane treatment is warranted under the No Action Alternative, and is not caused by the addition of Option B traffic.

6.2.2.2 Fort Pickett Access Gate Analysis

Under Option B, a new access gate would be established on Dearing Avenue, to the north of W. 10th Street. As previously discussed, this analysis assumes some existing vehicles that currently enter Fort Pickett at the Main Gate would divert to the proposed Dearing Avenue gate. **Table 6-6** summarizes traffic volumes and staffing requirements at all three gates under Option B. As shown in this table, Option B would not increase traffic levels so as to necessitate additional guards to process inbound trips at either the Main Gate or the West Gate. As shown below, the projected future inbound volume at the proposed access gate on Dearing Avenue would be 148 vehicles during the morning peak hour. This is substantially below the minimum threshold of 375 vehicles per hour per lane established by Virginia Army National Guard for two guards per land. Therefore, based on Virginia Army National Guard criteria, a single guard would suffice at this location. However, the actual number of guards at this gate would be determined by DOS based upon current doctrine and practice for access control.

Table 6-6. Summary of Gate Analysis – Build Alternative 3, Option B (Year 2018)

Ma	in Gate (N	Military Ro	ad)	West Gate (West Entrance Road)				Proposed Dearing Gate (Dearing Ave)			
	ak-hour 30 a.m.)		ak-hour 00 p.m.)		P.M. Peak-hour P.M. Peak-hour (4:00-5:00 p.m.)		A.M. Peak-hour (6:30-7:30 a.m.)	P.M. Peak-hour (4:00-5:00 p.m.)			
Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 1		
vph	vph	vph	vph	vph	vph	vph vph		vph	vph		
200	131	18	17	73	91	18	17	148	53		
Guards	Guards	Guards	Guards	Guards	Guards	Guards	Guards	Guards	Guards		
1	1	1	1	1	1	1	1	1	1		

Note:

vph = vehicles per hour.

6.2.2.3 Intersection Control Warrants

Because none of the traffic movements at any of the intersections are characterized by LOS E or LOS F under Option B, no traffic signal warrant analysis was performed. As shown in Table 6-4, all intersection traffic movements operate at LOS C or better during both peak hours; therefore, traffic signal installation is not needed to address any projected future intersection delay caused by project-related traffic or background traffic growth.

6.2.2.4 Site Access and Internal Circulation

Option B would have the same access configuration as Option A. Therefore, the following traffic circulation measure is also recommended for Option B:

It is recommended that the Entry Loop be designed to accommodate and efficiently process vehicles approaching the Core Area. As feasible, passenger cars traveling to and from the surface parking lot

should be separated from buses, minivans, and pedestrians. Where queues may form, sufficient storage should be provided to avoid blocking adjacent lanes and to prevent vehicles from stacking onto Dearing Avenue. To facilitate the transfer of students, it is recommended that minivans be scheduled to arrive and park before buses in the morning, while buses should be in place before the arrival of minivans in the afternoon. Signage, pavement markings, pedestrian islands and other design elements should be considered to accommodate safe and efficient pedestrian movement at the Core Area.

6.3 CONSTRUCTION IMPACTS

Implementation of any action alternative would involve temporary traffic impacts resulting from demolition and construction activities. The following types of additional trips are expected be added to the highway network:

- Construction worker commuting trips;
- Trips involving the delivery and removal of construction equipment and materials; and
- Trips involving the removal of demolition debris and excess fill material.

These trips would be temporary, and would not occur after the completion of project construction. Whereas construction worker commuter trips are expected to be concentrated during the traditional peak commuting periods, other trips would likely be dispersed throughout the typical working day. Regardless of the access option selected, construction traffic would approach the project site via Dearing Avenue, and would not enter Fort Pickett at either the Main Gate or the West Gate. The existing barrier across Dearing Avenue to the north of W. 10th Street would be temporarily opened to construction traffic until construction activities are completed. GSA and DOS would cooperate with Fort Pickett to ensure that appropriate security protocols are observed for construction traffic entering the installation. Given the temporary nature of construction traffic, and considering that all traffic movements are characterized by LOS C or better conditions under the No Action Alternative, the addition of construction related trips is not expected to result in a significant traffic-related impact.

6.4 CUMULATIVE IMPACTS

Although the Proposed Action would not have a significant direct traffic impact, its impacts, when considered together with other past, present and reasonably foreseeable future projects, are evaluated for potential cumulative effect. The traffic impacts of past projects (e.g., additional traffic from new development, changes in capacity, and circulation patterns due to transportation improvements) are reflected in the existing traffic conditions described in Chapter 3. Although no present or reasonably foreseeable future projects have been specifically identified and analyzed in this TIA, projected future traffic growth (i.e., one percent compounded annually) included in the No Action Alternative accounts for future projects that may add trips to the ROI. Reasonably foreseeable future projects that have not undergone environmental reviews under the National Environmental Policy Act and other state and local regulations would ensure that traffic impacts are avoided, minimized, and/or mitigated for to the extent practicable. The Proposed Action's contribution to cumulative traffic impacts would be relatively minor, consisting of additional passenger car, bus and minivan trips. The volume of traffic to be added, particularly during the peak hours, would be comparatively small. Accordingly, the Proposed Action would not result in any significant cumulative impacts relative to traffic and circulation.

Chapter 7 FINDINGS AND RECOMMENDATIONS

Two proposed FASTC access options are analyzed. Under Option A, access for project-related traffic to Fort Pickett would be provided at the existing Main Gate (i.e., on Military Road south of Darvills Road) and the existing West Gate (i.e., on West Entrance Road west of Military Road). The existing closed gate across Dearing Avenue north of W. 10th Street would remain closed under this option. Under Option B, the main access to FASTC would be at an additional access point that would be established on Dearing Avenue, north of W. 10th Street (i.e., the existing closed gate would be replaced by an operating controlled access). Access for Fort Pickett traffic would continue to be provided at the Main Gate and at the West Gate, and this analysis assumes that a limited amount of FASTC traffic would use the existing gates. The majority of all FASTC trips (i.e., approximately 80 percent), including all bus and minivan trips, would be directed to the proposed Dearing Avenue gate under Option B.

Access to and from the FASTC facility would be concentrated along Dearing Avenue between Military Road and W. 10th Street. A one-way loop circulation road (or "Entry Loop") would be constructed to the west of Dearing Avenue, and would form two intersections with this roadway. The one-way traffic flow would be from north to south. The Entry Loop would provide access to and from the FASTC Core Area. The Core Area would accommodate the majority of trips accessing the facility. These trips include passenger cars driven by instructors and staff, buses transporting students from area hotels, and minivans transporting students from the Core Area to training venues within FASTC.

The following analyses were performed under year 2018 conditions for both options.

- Peak hour (i.e., 6:30 to 7:30 a.m. and 4:00 to 5:00 p.m.) capacity analysis at 15 intersections;
- Turn lane storage and taper requirements at four intersections on designated VDOT-maintained facilities; and
- Peak hour traffic volumes and staffing requirements at Fort Pickett access gates.

This TIA also addresses traffic signal warrants and provides a qualitative assessment of site access and internal circulation. The key findings and conclusions of these analyses are described below.

- Capacity Analysis: All traffic movements at all intersections would be characterized by LOS C or better conditions during both peak hours for both options. Because the Proposed Action would not cause any movement to exceed the minimum performance standard of LOS D, its traffic impacts would be less than significant and no avoidance, minimization, or mitigation measures are recommended.
- Turning Lane Analysis: Although there are no direct traffic impacts, a turning lane analysis was
 performed with projected year 2018 traffic volumes using VDOT design criteria for Access
 Management (VDOT 2005). These criteria address turning lane needs and design features to
 ensure safe and efficient traffic movements.
 - Under the No Action Alternative without the proposed project, the turning lane analysis
 determined that 2018 traffic volumes will result in the existing turning lane storage
 being less than VDOT design standards at two intersections, and that the following
 turning lane improvements may be warranted:

- 1. New exclusive westbound left turn lane, including storage and taper, at the Cox Road/Military Road intersection.
- 2. Extend the existing eastbound right turn lane storage and taper at the Darvills Road/Military Road intersection.
- O Under Build Alternative 3 for Option A and B, although there are no significant direct traffic impacts from the proposed project, the turning lane analysis determined that additional project-related traffic would result in the existing turning lane storage being less than VDOT design standards at three intersections. One movement of the U.S. Route 460/Cox Road intersection would be less than standard under Option A or B. Under Option B only, one movement at the Darvills Road/Military Road intersection and one movement at the Darvills Road/Dearing Avenue intersection would be less than standard. To address VDOT policy for turning lane storage criteria, the following turning lane improvements may be warranted at these three additional intersections:
 - 1. Extend the existing westbound left turn lane storage and taper at the U.S. Route 460/Cox Road intersection (Option A and B).
 - 2. New exclusive westbound right turn lane, including storage and taper, at the Darvills Road/Military Road intersection (Option B only).
 - 3. Extend the existing eastbound right turn lane storage and taper at the Darvills Road/Dearing Avenue intersection (Option B only).
- Fort Pickett Gate Analysis: Neither option would increase traffic levels at either the Main Gate or the West Gate so as to necessitate additional guards to process inbound trips. Under Option B, the projected future inbound volume at the proposed access gate on Dearing Avenue would be 148 vehicles during the morning peak hour. This is substantially below the minimum threshold of 375 vehicles per hour established by Virginia Army National Guard for two guards per lane. Therefore, based on Virginia Army National Guard criteria, as single guard would suffice at this location. However, the actual number of guards at this gate would be determined by DOS based upon a review of their doctrine and practice for access control.
- Internal Circulation: The Core Area would accommodate a mixture of vehicles, including personal vehicles, buses, and minivans. Also, there would be substantial pedestrian activity at the Core Area, as students would transfer from buses to minivans at this location. The following traffic circulation measure would avoid potential transportation-related effects:
 - 1. It is recommended that the Entry Loop be designed to accommodate and efficiently process vehicles approaching the Core Area. As feasible, passenger cars traveling to and from the surface parking lot should be separated from buses, minivans, and pedestrians. Where queues may form, sufficient storage should be provided to avoid blocking adjacent lanes and to prevent vehicles from stacking onto Dearing Avenue. To facilitate the transfer of students, minivans should be scheduled to arrive and park before buses in the morning, while buses should be in place before the arrival of minivans in the afternoon. Signage, pavement markings, pedestrian islands and other design elements should be considered to accommodate safe and efficient pedestrian movement at the Core Area.

Chapter 8 REFERENCES

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Attachment A2014 Traffic Counts

File Name: TM 1-Dearing Ave. and Darvills Rd. AM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Car

Crouper timod Car													
		Darvil	ls Rd			Dearing	g Ave			Darvill	ls Rd		
		Westb	ound		Northbound			Eastbound					
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
06:30 AM	7	1	0	8	0	0	0	0	1	6	0	7	15
06:45 AM	4	2	0	6	0	0	0	0	1	1	0	2	8
 Total	11	3	0	14	0	0	0	0	2	7	0	9	23
07:00 AM	10	0	0	10	1	0	0	1	2	3	0	5	16
07:15 AM	9	0	0	9	0	0	0	0	0	4	0	4	13
07:30 AM	13	0	0	13	0	0	0	0	1	4	0	5	18
07:45 AM	11	0	0	11	0	1	0	1	2	5	0	7	19
Total	43	0	0	43	1	1	0	2	5	16	0	21	66
08:00 AM	6	0	0	6	0	0	0	0	2	3	0	5	11
08:15 AM	5	0	0	5	0	1	0	1	6	5	0	11	17
Grand Total	65	3	0	68	1	2	0	3	15	31	0	46	117
Apprch %	95.6	4.4	0		33.3	66.7	0		32.6	67.4	0		
Total %	55.6	2.6	0	58.1	0.9	1.7	0	2.6	12.8	26.5	0	39.3	

		Darvills Ro Westbound			Dearing Ave Northbound				Darvills Rd Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Tota	Int. Total		
Peak Hour Analysis From 06:30 AM	I to 08:15 AM - Pe	eak 1 of 1										
Peak Hour for Entire Intersection	on Begins at 07:0	0 AM										
07:00 AM	10	0	10	1	0	1	2	3	5	16		
07:15 AM	9	0	9	0	0	0	0	4	4	13		
07:30 AM	13	0	13	0	0	0	1	4	5	18		
07:45 AM	11	0	11	0	1	1	2	5	7	19		
Total Volume	43	0	43	1	1	2	5	16	21	66		
% App. Total	100	0		50	50		23.8	76.2				
PHF	.827	.000	.827	.250	.250	.500	.625	.800	.750	.868		

File Name: TM 1-Dearing Ave. and Darvills Rd. AM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Truck

				D iii Di													
		Darvill	s Rd			Dearing	g Ave			Darvill	s Rd						
		Westb	ound			Northb	ound			Eastb	ound						
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total				
06:30 AM	1	1	0	2	1	0	0	1	1	0	0	1	4				
06:45 AM	0	1	0	1	1	1	0	2	0	2	0	2	5				
Total	1	2	0	3	2	1	0	3	1	2	0	3	9				
07:00 AM	0	0	0	0	1	1	0	2	2	0	0	2	4				
07:15 AM	0	1	0	1	1	2	0	3	2	1	0	3	7				
07:30 AM	2	1	0	3	2	0	0	2	1	0	0	1	6				
07:45 AM	1	0	0	1	2	1	0	3	1	1	0	2	6				
Total	3	2	0	5	6	4	0	10	6	2	0	8	23				
08:00 AM	0	2	0	2	1	0	0	1	1	3	0	4	7				
08:15 AM	0	1	0	1	2	0	0	2	0	0	0	0	3				
Grand Total	4	7	0	11	11	5	0	16	8	7	0	15	42				
Apprch %	36.4	63.6	0		68.8	31.2	0		53.3	46.7	0						
Total %	9.5	16.7	0	26.2	26.2	11.9	0	38.1	19	16.7	0	35.7					

		Darvills Rd Westbound			Dearing Av Northboun			Darvills Rd Eastbound		
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM	I to 08:15 AM - Pea	ak 1 of 1								
Peak Hour for Entire Intersection	on Begins at 07:15	AM								
07:15 AM	0	1	1	1	2	3	2	1	3	7
07:30 AM	2	1	3	2	0	2	1	0	1	6
07:45 AM	1	0	1	2	1	3	1	1	2	6
08:00 AM	0	2	2	1	0	1	1	3	4	7
Total Volume	3	4	7	6	3	9	5	5	10	26
% App. Total	42.9	57.1		66.7	33.3		50	50		
PHF	.375	.500	.583	.750	.375	.750	.625	.417	.625	.929

File Name: TM 1-Dearing Ave. and Darvills Rd. AM

Site Code:

Start Date : 8/19/2014

: 1

Page No Groups Printed- Combined

					O. Gapo		20111211100	4					
		Darvill	ls Rd			Dearing	g Ave			Darvill	ls Rd		
		Westb	ound			Northb	ound			Eastb	ound		
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
06:30 AM	8	2	0	10	1	0	0	1	2	6	0	8	19
06:45 AM	4	3	0	7	1	1	0	2	1	3	0	4	13
Total	12	5	0	17	2	1	0	3	3	9	0	12	32
07:00 AM	10	0	0	10	2	1	0	3	4	3	0	7	20
07:15 AM	9	1	0	10	1	2	0	3	2	5	0	7	20
07:30 AM	15	1	0	16	2	0	0	2	2	4	0	6	24
07:45 AM	12	0	0	12	2	2	0	4	3	6	0	9	25
Total	46	2	0	48	7	5	0	12	11	18	0	29	89
												1	
08:00 AM	6	2	0	8	1	0	0	1	3	6	0	9	18
08:15 AM	5	1	0	6	2	1	0	3	6	5	0	11	20
Grand Total	69	10	0	79	12	7	0	19	23	38	0	61	159
Apprch %	87.3	12.7	0		63.2	36.8	0		37.7	62.3	0		
Total %	43.4	6.3	0	49.7	7.5	4.4	0	11.9	14.5	23.9	0	38.4	

		Darvills Rd Westbound			Dearing Av Northboun			Darvills Rd Eastbound		
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM	I to 08:15 AM - Peal	k 1 of 1								
Peak Hour for Entire Intersection	on Begins at 07:00	AM								
07:00 AM	10	0	10	2	1	3	4	3	7	20
07:15 AM	9	1	10	1	2	3	2	5	7	20
07:30 AM	15	1	16	2	0	2	2	4	6	24
07:45 AM	12	0	12	2	2	4	3	6	9	25
Total Volume	46	2	48	7	5	12	11	18	29	89
% App. Total	95.8	4.2		58.3	41.7		37.9	62.1		
PHF	.767	.500	.750	.875	.625	.750	.688	.750	.806	.890

File Name: TM 1-Dearing Ave. and Darvills Rd. PM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Car

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		Darvill	ls Rd			Dearing	g Ave			Darvil	ls Rd		
		Westb	ound			Northb	ound			Eastb	ound		
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
03:30 PM	8	0	0	8	1	1	0	2	2	14	0	16	26
03:45 PM	11	1	0	12	0	1	0	1	0	9	0	9	22
Total	19	1	0	20	1	2	0	3	2	23	0	25	48
				1									
04:00 PM	12	0	0	12	0	5	0	5	2	15	0	17	34
04:15 PM	6	0	0	6	0	1	0	1	2	9	0	11	18
04:30 PM	6	0	0	6	1	4	0	5	0	17	0	17	28
04:45 PM	1	1	0	2	1	3	0	4	2	11	0	13	19
Total	25	1	0	26	2	13	0	15	6	52	0	58	99
05:00 PM	5	1	0	6	1	1	0	2	۱ 0	Q	0	9	17
05:15 PM	4	0	0	4	2	2	0	1	0	18	0	18	26
	4	0	0	4	2	10	0	24	0		0		
Grand Total	53	3	0	56	6	18	0	24	8	102	0	110	190
Apprch %	94.6	5.4	0		25	75	0		7.3	92.7	0		
Total %	27.9	1.6	0	29.5	3.2	9.5	0	12.6	4.2	53.7	0	57.9	

		Darvills Ro Westbound			Dearing Av Northboun			Darvills Ro Eastbound					
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total			
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection	on Begins at 03:4	5 PM											
03:45 PM	11	1	12	0	1	1	0	9	9	22			
04:00 PM	12	0	12	0	5	5	2	15	17	34			
04:15 PM	6	0	6	0	1	1	2	9	11	18			
04:30 PM	6	0	6	1	4	5	0	17	17	28			
Total Volume	35	1	36	1	11	12	4	50	54	102			
% App. Total	97.2	2.8		8.3	91.7		7.4	92.6					
PHF	.729	.250	.750	.250	.550	.600	.500	.735	.794	.750			

File Name: TM 1-Dearing Ave. and Darvills Rd. PM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Truck

	Groupe Filmou Frank													
		Darvill	ls Rd			Dearing	g Ave			Darvill	s Rd			
		Westb	ound			Northb				Eastbo	ound			
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total	
03:30 PM	0	1	0	1	0	1	0	1	2	0	0	2	4	
03:45 PM	3	0	0	3	0	3	0	3	1	0	0	1	7	
Total	3	1	0	4	0	4	0	4	3	0	0	3	11	
04:00 PM	2	2	0	4	1	1	0	2	0	0	0	0	6	
04:15 PM	2	2	0	4	0	2	0	2	2	0	0	2	8	
04:30 PM	0	0	0	0	2	2	0	4	1	2	0	3	7	
04:45 PM	2	0	0	2	0	2	0	2	1	1	0	2	6	
Total	6	4	0	10	3	7	0	10	4	3	0	7	27	
05:00 PM	0	2	0	2	0	0	0	0	0	1	0	1	3	
05:15 PM	0	0	0	0	0	3	0	3	1	1	0	2	5	
Grand Total	9	7	0	16	3	14	0	17	8	5	0	13	46	
Apprch %	56.2	43.8	0		17.6	82.4	0		61.5	38.5	0			
Total %	19.6	15.2	0	34.8	6.5	30.4	0	37	17.4	10.9	0	28.3		

		Darvills R	d		Dearing Av	/e		Darvills R	d				
		Westboun	d		Northbour	nd		Eastboun	d				
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total			
Peak Hour Analysis From 03:30 PM													
Peak Hour for Entire Intersection	on Begins at 03:4	45 PM											
03:45 PM	3	0	3	0	3	3	1	0	1	7			
04:00 PM	2	2	4	1	1	2	0	0	0	6			
04:15 PM	2	2	4	0	2	2	2	0	2	8			
04:30 PM	0	0	0	2	2	4	1	2	3	7			
Total Volume	7	4	11	3	8	11	4	2	6	28			
% App. Total	63.6	36.4		27.3	72.7		66.7	33.3					
PHF	.583	.500	.688	.375	.667	.688	.500	.250	.500	.875			

File Name: TM 1-Dearing Ave. and Darvills Rd. PM

Site Code:

Start Date : 8/19/2014

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Page No Groups Printed- Combined

					O.00.p0		20111211100	-					
		Darvill	ls Rd		•	Dearing	g Ave			Darvil	ls Rd		
		Westb	ound			Northb	ound			Eastb	ound		
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
03:30 PM	8	1	0	9	1	2	0	3	4	14	0	18	30
03:45 PM	14	1	0	15	0	4	0	4	1	9	0	10	29
Total	22	2	0	24	1	6	0	7	5	23	0	28	59
04:00 PM	14	2	0	16	1	6	0	7	2	15	0	17	40
04:15 PM	8	2	0	10	0	3	0	3	4	9	0	13	26
04:30 PM	6	0	0	6	3	6	0	9	1	19	0	20	35
04:45 PM	3	1	0	4	1	5	0	6	3	12	0	15	25
Total	31	5	0	36	5	20	0	25	10	55	0	65	126
05:00 PM	5	3	0	8	1	1	0	2	0	10	0	10	20
05:15 PM	4	0	0	4	2	5	0	7	1	19	0	20	31
Grand Total	62	10	0	72	9	32	0	41	16	107	0	123	236
Apprch %	86.1	13.9	0		22	78	0		13	87	0		
Total %	26.3	4.2	0	30.5	3.8	13.6	0	17.4	6.8	45.3	0	52.1	

		Darvills Rd Westbound			Dearing Av Northboun			Darvills Rd Eastbound		
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM	I to 05:15 PM - Pea	k 1 of 1								
Peak Hour for Entire Intersection	on Begins at 03:45	5 PM								
03:45 PM	14	1	15	0	4	4	1	9	10	29
04:00 PM	14	2	16	1	6	7	2	15	17	40
04:15 PM	8	2	10	0	3	3	4	9	13	26
04:30 PM	6	0	6	3	6	9	1	19	20	35
Total Volume	42	5	47	4	19	23	8	52	60	130
% App. Total	89.4	10.6		17.4	82.6		13.3	86.7		
PHF	.750	.625	.734	.333	.792	.639	.500	.684	.750	.813

File Name: TM 2-Dearing Ave. and Airfield Access Rd. AM

Site Code:

Start Date : 8/19/2014

Page No : 1 Groups Printed- Car

					Cito	apo i illito							
		Dearing	g Ave			Dearin	g Ave			Arbor Tec	h Drvwy		
		Southb				Northb	ound			Eastbo	ound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
06:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
06:45 AM	1	3	0	4	0	0	0	0	0	0	0	0	4
Total	2	3	0	5	0	0	0	0	0	0	0	0	5
07:00 AM	1	1	0	2	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
07:45 AM	0	1	0	1	1	0	0	1	0	0	0	0	2
Total	2	2	0	4	1	0	0	1	0	0	0	0	5
08:00 AM	1	1	0	2	0	0	0	0	0	0	0	0	2
08:15 AM	3	2	0	5	1	0	0	1	0	0	0	0	6
Grand Total	8	8	0	16	2	0	0	2	0	0	0	0	18
Apprch %	50	50	0		100	0	0		0	0	0		
Total %	44.4	44.4	0	88.9	11.1	0	0	11.1	0	0	0	0	

		Dearing Av Southbour			Dearing Av Northboun		Aı	bor Tech D						
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total				
Peak Hour Analysis From 06:30 AM	I to 08:15 AM - P	eak 1 of 1												
Peak Hour for Entire Intersection	Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	1	0	1	0	0	0	0	0	0	1				
07:45 AM	0	1	1	1	0	1	0	0	0	2				
08:00 AM	1	1	2	0	0	0	0	0	0	2				
08:15 AM	3	2	5	1	0	1	0	0	0	6				
Total Volume	5	4	9	2	0	2	0	0	0	11				
% App. Total	55.6	44.4		100	0		0	0						
PHF	.417	.500	.450	.500	.000	.500	.000	.000	.000	.458				

File Name: TM 2-Dearing Ave. and Airfield Access Rd. AM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Truck

	Dearing	g Ave			Dearin	g Ave		,	Arbor Tec	h Drvwy		
	Southb	ound			Northb	ound			Eastb	ound		
Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
2	0	0	2	0	0	0	0	0	1	0	1	3
1	0	0	1	0	0	0	0	0	2	0	2	3
3	0	0	3	0	0	0	0	0	3	0	3	6
1	0	0	1	0	0	0	0	0	3	0	3	4
3	0	0	3	0	0	0	0	0	2	0	2	5
3	0	0	3	0	0	0	0	0	2	0	2	5
1	0	0	1	0	0	0	0	0	3	0	3	4
8	0	0	8	0	0	0	0	0	10	0	10	18
3	0	0	3	0	0	0	0	0	1	0	1	4
1	0	0	1	0	0	0	0	0	2	0	2	3
15	0	0	15	0	0	0	0	0	16	0	16	31
100	0	0		0	0	0		0	100	0		
48.4	0	0	48.4	0	0	0	0	0	51.6	0	51.6	
	2 1 3 1 3 3 1 8 8 3 1 15 100	Southbox Southbox	2 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Southbound Right Thru Peds App. Total 2 0 0 2 1 0 0 1 3 0 0 3 1 0 0 3 3 0 0 3 1 0 0 1 8 0 0 8 3 0 0 3 1 0 0 1 15 0 0 15 100 0 0 0	Dearing Ave Southbound Right Thru Peds App. Total Thru Peds Peds	Dearing Ave Southbound Northbound No	Southbound Right Thru Peds App. Total Thru Left Peds 2 0 0 2 0 0 0 1 0 0 1 0 0 0 3 0 0 3 0 0 0 3 0 0 3 0 0 0 3 0 0 3 0 0 0 3 0 0 3 0 0 0 8 0 0 8 0 0 0 8 0 0 3 0 0 0 1 0 0 3 0 0 0 3 0 0 3 0 0 0 3 0 0 3 0 0 0 1 0 0 1 0 0 <	Dearing Ave Southbound Peds App. Total Thru Peds App. Total Thru Left Peds App. Total	Dearing Ave Southbound Pight Police Po	Dearing Ave Southbound Peds App. Total Thru Left Peds App. Total Right Right Peds Peds App. Total Right Right Peds Peds App. Total Right Right Peds Peds	Dearing Ave Southbound Peds App. Total Thru Peds App. Total Thru Peds App. Total Peds App. Total Peds Peds App. Total Peds Peds App. Total Peds Peds App. Total Peds P	Dearing Ave Southbound Peds App. Total Thru Left Peds App. Total Ped

		Dearing Av			Dearing Av Northboun		Aı	rvwy d		
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM	I to 08:15 AM - Pe	ak 1 of 1								
Peak Hour for Entire Intersection	on Begins at 07:00) AM								
07:00 AM	1	0	1	0	0	0	0	3	3	4
07:15 AM	3	0	3	0	0	0	0	2	2	5
07:30 AM	3	0	3	0	0	0	0	2	2	5
07:45 AM	1	0	1	0	0	0	0	3	3	4
Total Volume	8	0	8	0	0	0	0	10	10	18
% App. Total	100	0		0	0		0	100		
PHF	.667	.000	.667	.000	.000	.000	.000	.833	.833	.900

File Name: TM 2-Dearing Ave. and Airfield Access Rd. AM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Combined

					Cidap	o i illitoa	COMBINE	,u					
		Dearin	ig Ave		•	Deari	ng Ave			Arbor Te	ch Drvwy		
			bound			North	bound			Eastl	bound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
06:30 AM	3	0	0	3	0	0	0	0	0	1	0	1	4
06:45 AM	2	3	0	5	0	0	0	0	0	2	0	2	7
Total	5	3	0	8	0	0	0	0	0	3	0	3	11
07:00 AM	2	1	0	3	0	0	0	0	0	3	0	3	6
07:15 AM	3	0	0	3	0	0	0	0	0	2	0	2	5
07:30 AM	4	0	0	4	0	0	0	0	0	2	0	2	6
07:45 AM	1	1	0	2	1	0	0	1	0	3	0	3	6
Total	10	2	0	12	1	0	0	1	0	10	0	10	23
08:00 AM	4	1	0	5	0	0	0	0	0	1	0	1	6
08:15 AM	4	2	0	6	1	0	0	1	0	2	0	2	9
Grand Total	23	8	0	31	2	0	0	2	0	16	0	16	49
Apprch %	74.2	25.8	0		100	0	0		0	100	0		
Total %	46.9	16.3	0	63.3	4.1	0	0	4.1	0	32.7	0	32.7	

		Dearing Av Southbour			Dearing Av Northboun		Aı	bor Tech D		
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM	I to 08:15 AM - P	eak 1 of 1								
Peak Hour for Entire Intersection	on Begins at 07:3	30 AM								
07:30 AM	4	0	4	0	0	0	0	2	2	6
07:45 AM	1	1	2	1	0	1	0	3	3	6
08:00 AM	4	1	5	0	0	0	0	1	1	6
08:15 AM	4	2	6	1	0	1	0	2	2	9
Total Volume	13	4	17	2	0	2	0	8	8	27
% App. Total	76.5	23.5		100	0		0	100		
PHF	.813	.500	.708	.500	.000	.500	.000	.667	.667	.750

File Name: TM 2-Dearing Ave. and Airfield Access Rd. PM

Site Code:

Start Date : 8/19/2014

Page No : 1 Groups Printed- Car

	Dearing Ave Dearing Ave Arbor Tech Drvwy												
		Dearing	g Ave			Dearin	g Ave						
		Southb	ound			Northb	ound			Eastb	ound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
03:30 PM	2	0	0	2	0	0	0	0	0	2	0	2	4
03:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	3	0	0	3	0	0	0	0	0	2	0	2	5
04:00 PM	1	0	0	1	3	0	0	3	0	1	0	1	5
04:15 PM	2	0	0	2	0	0	0	0	0	1	0	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	5	0	5	5
04:45 PM	1	2	0	3	0	0	0	0	0	4	0	4	7
Total	4	2	0	6	3	0	0	3	0	11	0	11	20
05:00 PM	1	0	0	1	0	0	0	0	0	2	0	2	3
05:15 PM	0	0	0	0	0	0	0	0	0	4	0	4	4
Grand Total	8	2	0	10	3	0	0	3	0	19	0	19	32
Apprch %	80	20	0		100	0	0		0	100	0		
Total %	25	6.2	0	31.2	9.4	0	0	9.4	0	59.4	0	59.4	

		Dearing Ave Southbound			Dearing Av Northbound		Ar	bor Tech Dr Eastbound		
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM	I to 05:15 PM - Peal	k 1 of 1								
Peak Hour for Entire Intersection	on Begins at 04:00	PM								
04:00 PM	1	0	1	3	0	3	0	1	1	5
04:15 PM	2	0	2	0	0	0	0	1	1	3
04:30 PM	0	0	0	0	0	0	0	5	5	5
04:45 PM	1	2	3	0	0	0	0	4	4	7
Total Volume	4	2	6	3	0	3	0	11	11	20
% App. Total	66.7	33.3		100	0		0	100		
PHF	.500	.250	.500	.250	.000	.250	.000	.550	.550	.714

File Name: TM 2-Dearing Ave. and Airfield Access Rd. PM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Truck

					0.00	po 1 1111100							
		Dearing	g Ave			Dearing	g Ave						
		Southb	ound			Northb	ound			Eastbo	ound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
03:30 PM	3	0	0	3	0	0	0	0	0	1	0	1	4
03:45 PM	1	0	0	1	0	0	0	0	0	3	0	3	4
Total	4	0	0	4	0	0	0	0	0	4	0	4	8
04:00 PM	2	0	0	2	0	0	0	0	0	2	0	2	4
04:15 PM	4	0	0	4	0	0	0	0	0	2	0	2	6
04:30 PM	0	1	0	1	0	0	0	0	0	4	0	4	5
04:45 PM	1	0	0	1	1	0	0	1	0	1	0	1	3
Total	7	1	0	8	1	0	0	1	0	9	0	9	18
05:00 PM	2	0	0	2	0	0	0	0	0	0	0	0	2
05:15 PM	1	0	0	1	0	0	0	0	0	3	0	3	4
Grand Total	14	1	0	15	1	0	0	1	0	16	0	16	32
Apprch %	93.3	6.7	0		100	0	0		0	100	0		
Total %	43.8	3.1	0	46.9	3.1	0	0	3.1	0	50	0	50	

		Dearing Av Southboun			Dearing Av Northbour		Ar	rvwy d		
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM	I to 05:15 PM - Pe	ak 1 of 1								
Peak Hour for Entire Intersectio	on Begins at 03:4	5 PM								
03:45 PM	1	0	1	0	0	0	0	3	3	4
04:00 PM	2	0	2	0	0	0	0	2	2	4
04:15 PM	4	0	4	0	0	0	0	2	2	6
04:30 PM	0	1	1	0	0	0	0	4	4	5
Total Volume	7	1	8	0	0	0	0	11	11	19
% App. Total	87.5	12.5		0	0		0	100		
PHF	.438	.250	.500	.000	.000	.000	.000	.688	.688	.792

File Name: TM 2-Dearing Ave. and Airfield Access Rd. PM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Combined

					Groups	i iiiileu- (SOUIDINEC	4					
		Dearin	g Ave			Dearing	g Ave			Arbor Ted	ch Drvwy		
		Southb	ound			Northb	ound		Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
03:30 PM	5	0	0	5	0	0	0	0	0	3	0	3	8
03:45 PM	2	0	0	2	0	0	0	0	0	3	0	3	5
Total	7	0	0	7	0	0	0	0	0	6	0	6	13
04:00 PM	3	0	0	3	3	0	0	3	0	3	0	3	9
04:15 PM	6	0	0	6	0	0	0	0	0	3	0	3	9
04:30 PM	0	1	0	1	0	0	0	0	0	9	0	9	10
04:45 PM	2	2	0	4	1	0	0	1	0	5	0	5	10
Total	11	3	0	14	4	0	0	4	0	20	0	20	38
05:00 PM	3	0	0	3	0	0	0	0	0	2	0	2	5
05:15 PM	1	0	0	1	0	0	0	0	0	7	0	7	8
Grand Total	22	3	0	25	4	0	0	4	0	35	0	35	64
Apprch %	88	12	0		100	0	0		0	100	0		
Total %	34.4	4.7	0	39.1	6.2	0	0	6.2	0	54.7	0	54.7	

		Dearing Av	ve		Dearing Av	/e	Aı			
		Southbour	nd		Northbour	ıd		Eastboun	d	
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM	I to 05:15 PM - Po	eak 1 of 1								
Peak Hour for Entire Intersection	on Begins at 04:0	00 PM								
04:00 PM	3	0	3	3	0	3	0	3	3	9
04:15 PM	6	0	6	0	0	0	0	3	3	9
04:30 PM	0	1	1	0	0	0	0	9	9	10
04:45 PM	2	2	4	1	0	1	0	5	5	10
Total Volume	11	3	14	4	0	4	0	20	20	38
% App. Total	78.6	21.4		100	0		0	100		
PHF	.458	.375	.583	.333	.000	.333	.000	.556	.556	.950

File Name: TM 3-Dearing Ave. and E. 10th St. AM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Car

	Oloupo i inico Cui													
			Dearin	g Ave			Dearin	ng Ave			W. 10	th St		
			Southb	oound			North	bound			Eastb	ound		
Г	Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
	06:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
	06:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
	Total	0	1	0	1	0	0	0	0	1	0	0	1	2
					,								,	
	07:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
	07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	07:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
	07:45 AM	0	0	1	1	0	0	0	0	1	0	0	1	2
_	Total	0	0	1	1	0	1	0	1	2	0	0	2	4
	,				·									
	08:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
	08:15 AM	0	0	0	0	0	1	0	1	1	0	0	1	2
	08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Grand Total	0	1	1	2	0	2	0	2	5	0	0	5	9
	Apprch %	0	50	50		0	100	0		100	0	0		
	Total %	0	11.1	11.1	22.2	0	22.2	0	22.2	55.6	0	0	55.6	

	[Dearing Ave)		Dearing Av	/e		W. 10th S	t	
	(Southbound			Northboun	d		Eastbound	b	
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM	1 to 08:30 AM - Pea	k 1 of 1								
Peak Hour for Entire Intersection	n Begins at 07:30	AM								
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	1	0	1	1
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	1	1	1	0	1	2
Total Volume	0	0	0	0	1	1	4	0	4	5
% App. Total	0	0		0	100		100	0		
PHF	.000	.000	.000	.000	.250	.250	1.00	.000	1.00	.625

File Name: TM 3-Dearing Ave. and E. 10th St. AM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Truck

		District Track													
			Dearing	g Ave			Dearing	g Ave			W. 101	th St			
			Southb	ound			Northbo	ound			Eastbo	ound			
Г	Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total	
_	06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
-	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
	'												,		
	07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	07:15 AM	0	0	0	0	0	0	0	0	2	0	0	2	2	
	07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	07:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	1	
	Total	0	0	0	0	0	0	0	0	3	0	0	3	3	
	,														
	08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Grand Total	0	0	0	0	0	0	0	0	3	0	0	3	3	
	Apprch %	0	0	0		0	0	0		100	0	0			
	Total %	0	0	0	0	0	0	0	0	100	0	0	100		

		Dearing Av	e		Dearing Av	/e		W. 10th S	t	
		Southboun	d		Northboun	ıd		Eastbound	b	
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM	I to 08:30 AM - Pe	eak 1 of 1								
Peak Hour for Entire Intersection	n Begins at 07:0	0 AM								
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	3	0	3	3
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.375	.000	.375	.375

File Name: TM 3-Dearing Ave. and E. 10th St. AM

Site Code:

Start Date : 8/19/2014

Page No Groups Printed- Combined

		Croups i linios Combines													
			Dearing	g Ave		•	Dearin	ng Ave			W. 10	th St			
			Southb	ound			Northl	bound			Eastb	ound			
Г	Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total	
	06:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1	
	06:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1	
	Total	0	1	0	1	0	0	0	0	1	0	0	1	2	
													,		
	07:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	
	07:15 AM	0	0	0	0	0	0	0	0	2	0	0	2	2	
	07:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1	
	07:45 AM	0	0	1	1	0	0	0	0	2	0	0	2	3	
	Total	0	0	1	1	0	1	0	1	5	0	0	5	7	
	08:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	1	
	08:15 AM	0	0	0	0	0	1	0	1	1	0	0	1	2	
	08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Grand Total	0	1	1	2	0	2	0	2	8	0	0	8	12	
	Apprch %	0	50	50		0	100	0		100	0	0			
	Total %	0	8.3	8.3	16.7	0	16.7	0	16.7	66.7	0	0	66.7		

		earing Ave outhbound			Dearing Av Northbound			W. 10th St Eastbound		
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM	I to 08:30 AM - Peak	1 of 1								
Peak Hour for Entire Intersection	n Begins at 07:00 A	λM								
07:00 AM	0	0	0	0	1	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	2	0	2	2
Total Volume	0	0	0	0	1	1	5	0	5	6
% App. Total	0	0		0	100		100	0		
PHF	.000	.000	.000	.000	.250	.250	.625	.000	.625	.750

File Name: TM 3-Dearing Ave. and E. 10th St. PM

Site Code:

Start Date : 8/19/2014

Page No : 1

Groups Printed- Car

					0.0	apo i illitt							
		Dearing	g Ave			Dearin	ng Ave			W. 10	th St		
		Southb	ound			North	bound			Eastb	ound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
03:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	1	0	1	1	0	0	1	2
				,								,	
04:00 PM	0	0	0	0	0	1	0	1	0	1	0	1	2
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	2	0	3	5	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	2	2	1	3	6	8
				·									
05:00 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	1	1	3	0	4	4	1	3	8	13
Apprch %	100	0	0		25	75	0		50	12.5	37.5		
Total %	7.7	0	0	7.7	7.7	23.1	0	30.8	30.8	7.7	23.1	61.5	

		Dearing Av	е		Dearing Av	/e		W. 10th S	t	
		Southboun			Northboun	ıd		Eastbound	t	
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM	I to 05:30 PM - Pe	ak 1 of 1								
Peak Hour for Entire Intersection	on Begins at 03:4	5 PM								
03:45 PM	0	0	0	0	0	0	1	0	1	1
04:00 PM	0	0	0	0	1	1	0	1	1	2
04:15 PM	0	0	0	0	1	1	0	0	0	1
04:30 PM	0	0	0	0	0	0	2	0	2	2
Total Volume	0	0	0	0	2	2	3	1	4	6
% App. Total	0	0		0	100		75	25		
PHF	.000	.000	.000	.000	.500	.500	.375	.250	.500	.750

File Name: TM 3-Dearing Ave. and E. 10th St. PM

Site Code:

Start Date : 8/19/2014

Page No : 1
Groups Printed- Truck

					0.00	po i illitoa							
		Dearing	g Ave			Dearing	g Ave			W. 10	th St		
		Southb	ound			Northb	ound			Eastbo	ound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
				· ·									
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
				·									
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		
Total %													

		Dearing Ave			Dearing Av	re		W. 10th S	t	
		Southbound			Northboun			Eastbound	t	
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM	I to 05:30 PM - Peak	1 of 1								
Peak Hour for Entire Intersection	on Begins at 03:30	PM								
03:30 PM	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

File Name: TM 3-Dearing Ave. and E. 10th St. PM

Site Code:

Start Date : 8/19/2014

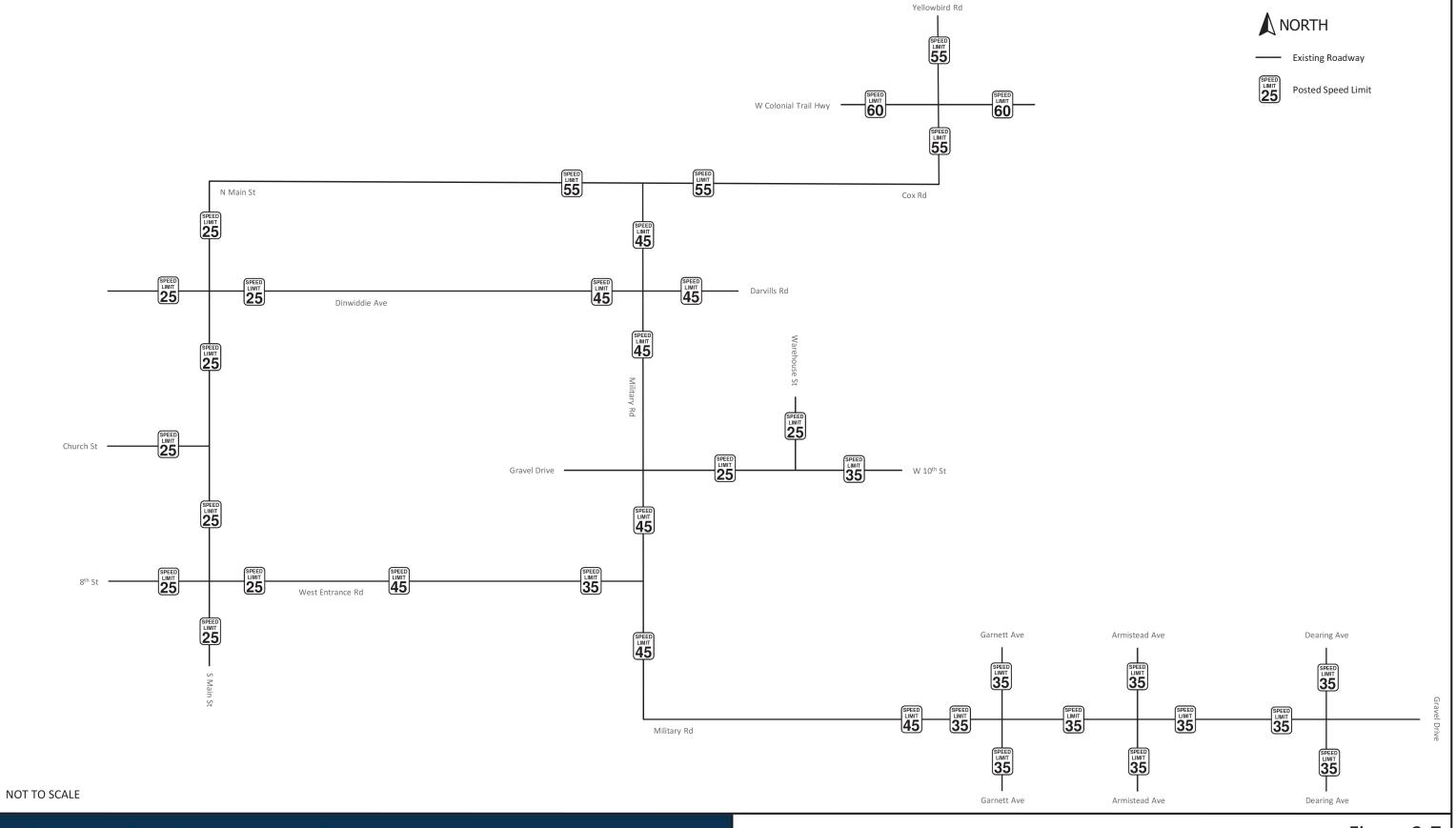
: 1

Page No Groups Printed- Combined

		Dearing	g Ave		•	Dearing	g Ave			W. 10	th St		
		Southb	ound			Northb	ound			Eastb	ound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
03:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	1	0	1	1	0	0	1	2
04:00 PM	0	0	0	0	0	1	0	1	0	1	0	1	2
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	2	0	3	5	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	2	2	1	3	6	8
·				·								,	
05:00 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	1	1	3	0	4	4	1	3	8	13
Apprch %	100	0	0		25	75	0		50	12.5	37.5		
Total %	7.7	0	0	7.7	7.7	23.1	0	30.8	30.8	7.7	23.1	61.5	

		Dearing Av	е		Dearing Av	/e		W. 10th S	t	
		Southboun	d		Northboun	ıd		Eastbound	b	
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM	to 05:30 PM - Pea	ak 1 of 1								
Peak Hour for Entire Intersection	n Begins at 03:45	5 PM								
03:45 PM	0	0	0	0	0	0	1	0	1	1
04:00 PM	0	0	0	0	1	1	0	1	1	2
04:15 PM	0	0	0	0	1	1	0	0	0	1
04:30 PM	0	0	0	0	0	0	2	0	2	2
Total Volume	0	0	0	0	2	2	3	1	4	6
% App. Total	0	0		0	100		75	25		
PHF	.000	.000	.000	.000	.500	.500	.375	.250	.500	.750

Attachment BExcerpts from the 2012 TIA



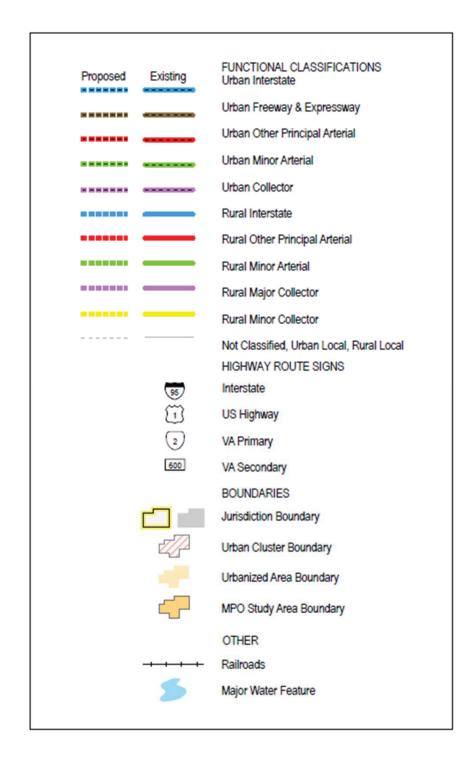


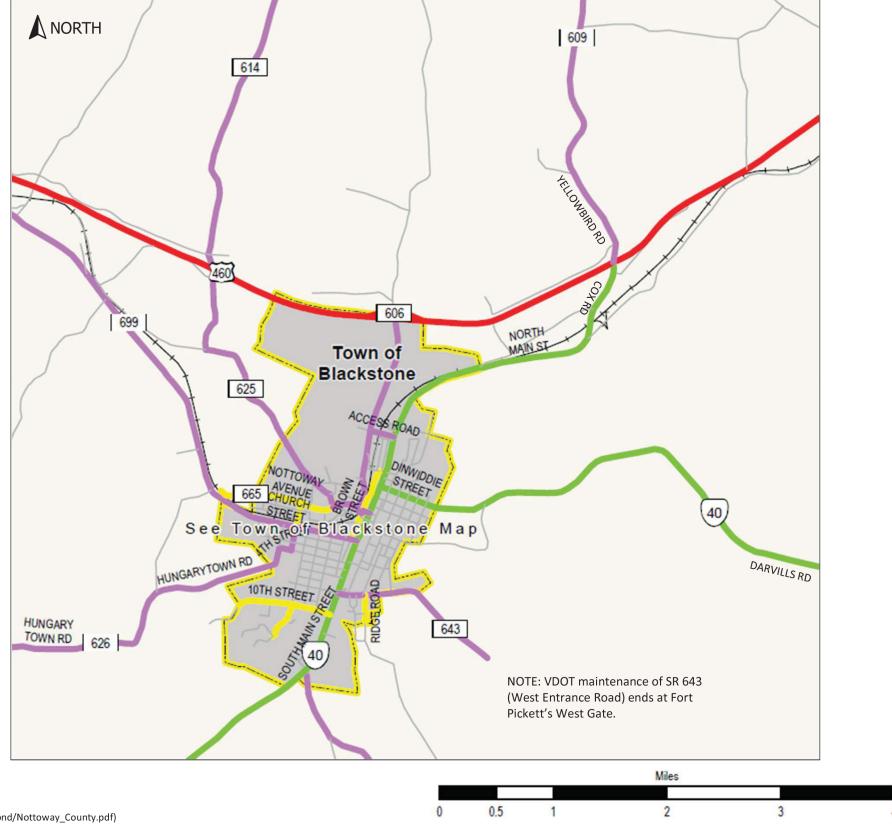




[FASTC]

FOREIGN AFFAIRS SECURITY TRAINING CENTER





Source: VDOT's Nottoway County 2005 Functional Classification Map (http://www.virginiadot.org/projects/resources/fxn_class/Richmond/Nottoway_County.pdf)

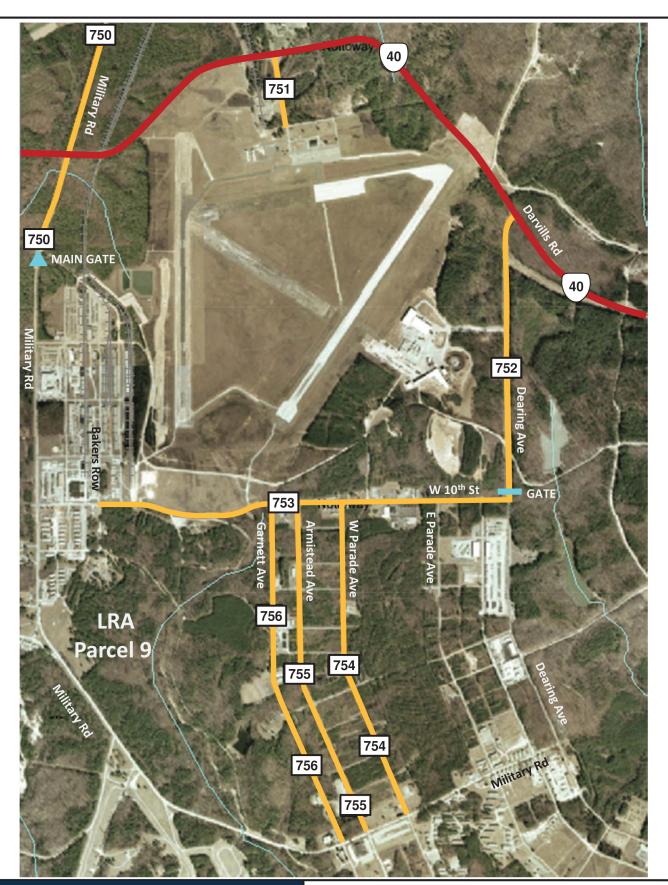






Figure 2-8

NOTE: VDOT maintenance of SR 750 (Military Road) ends at Fort Pickett's Main Gate.



NOTE: Dearing Avenue is gated off just north of W 10th Street to prevent access to Fort Pickett.









Source: VDOT Online Transportation Map (http://www.virginiadot.org/travel/prOTIM.asp)

Figure 2-9



Six-Year Improvement Program

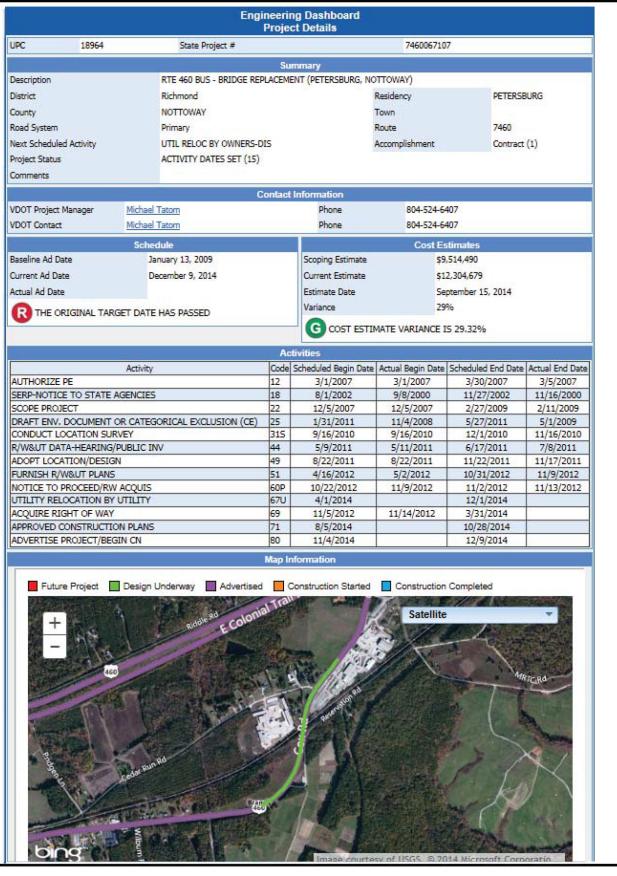
					- 1	Home	User's	Guide	Ab	out
All Projects	Major Pro	jects MPO	Fund	Reports						
Line	ltem	Detai	Is							
			P	roject Sun	nmary					
UPC	18964									
Project	RTE 460 BU	IS - BRIDGE RE	PLACEMEN ³	Г						
Scope of Work	Bridge Repla	acement w/o Ado	ded Capacity							
Description	FROM: 0.42	1MI S Rte 641 T	O: 0.123 MI I	N Rte 641						
Report Note										
Fund Source	BR/STP									
	Pro	ject Locatior	1		e	E	stimates	& Sched	lule	
District	Richmond	Jurisdiction	Nottow	ay County				timated Cos Thousands)		
Road System	Primary	Length	0.5450	MI					-	hedule
Route	7460	Street	COX R	OAD		Eng. (PE)		\$1,1		mplete
Structure No.	28704	Sufficiency Rat	ting -2		E131 - 111 -	f Way (RW)				derway
MPO Area	NonMPO				100 VI	iction (CN)		\$10,4		2015
	BURNESS WARREST				Total Es	stimate		\$12,30	05	
			Red	quired Allo	cations					
			Previous							Require After
			Allocations	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2020
Fund Sources			110		Value	es in Thous	ands of Doll	ars		
CTB Formula: Brid	ige - State		\$0	\$0	\$2,525	\$1,759	\$4,531	\$0	\$0	
Primary Formula: I			\$1,540		\$0	\$0	\$0	\$0	\$0	
Primary Formula:			\$221		\$0	\$0	\$0	\$0	\$0	
Primary Formula:			\$152		\$0	\$0	\$0	\$0	\$0	
Primary Formula:			\$1,098		\$0	\$0	\$0	\$0	\$0	
Primary Formula:	State Match		\$478		\$0	\$0	\$0	\$0	\$0	
Total Funding			\$3,489	\$0	\$2,525	\$1,759	\$4,531	\$0	\$0	

Note: the images above and at right show updated project information. Therefore, this figure supersedes Figure 2-10 of the 2012 TIA.

Sources: VDOT's Six-Year Improvement Program (http://syip.virginiadot.org/Pages/lineitemDetails.aspx?syp_scenario_id=193&line_item_id=182471) and VDOT's Dashboard (http://dashboard.virginiadot.org/Pages/Projects/EngineeringDetailDesign.aspx?prj_nbr=18964)







BABS LINE

O DOWNTO	& BLACKST	B PATTERS	P CARVE	S CRALLES	9 PINE.	O HARD.	8 VUM.	87H.B.	6 Food	O Kow	S LESTER C	D DOWN
6:00 AM	6:02	6:05	6:12	6:16	6:21	6:25	6:30	6:35	6:41	6:45	6:50	6:55
7:00 AM	7:02	7:05	7:12	7:16	7:21	7:25	7:30	7:35	7:41	7:45	7:50	7:55
8:00 AM	8:02	8:05	8:12	8:16	8:21	8:25	8:30	8:35	8:41	8:45	8:50	8:55
9:00 AM	9:02	9:05	9:12	9:16	9:21	9:25	9:30	9:35	9:41	9:45	9:50	9:55
10:00 AM	10:02	10:05	10:12	10:16	10:21	10:25	10:30	10:35	10:41	10:45	10:50	10:55
11:00 AM	11:02	11:05	11:12	11:16	11:21	11:25	11:30	11:35	11:41	11:45	11:50	11:55
12:00 PM	12:02	12:05	12:12	12:16	12:21	12:25	12:30	12:35	12:41	12:45	12:50	12:55
1:00 PM	1:02	1:05	1:12	1:16	1:21	1:25	1:30	1:35	1:41	1:45	1:50	1:55
2:00 PM	2:02	2:05	2:12	2:16	2:21	2:25	2:30	2:35	2:41	2:45	2:50	2:55
3:00 PM	3:02	3:05	3:12	3:16	3:21	3:25	3:30	3:35	3:41	3:45	3:50	3:55
4:00 PM	4:02	4:05	4:12	4:16	4:21	4:25	4:30	4:35	4:41	4:45	4:50	4:55

The bus runs from 6:00 AM to 5:00 PM on Monday through Friday, and from 9:00 AM to 5:00 PM on Saturdays.

Individuals may request, 24 hours in advance, to be picked up and dropped off curbside ANYWHERE within 34 of a mile of our regular route. Just call 24 hours in advance for special pick-up and drop-off requirements. BABS buses are ADA accessible, and equipped with the latest wheelchair lifts and securement systems.



[FASTC]

THE BLACKSTONE AREA BUS SYSTEM (BABS) WITH ASSISTANCE FROM THE VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION BEGAN ON JANUARY 13, 2003.

TAKE BABS... SHE'LL GET YOU THERE.



SCHEDULE AND ROUTE MAP

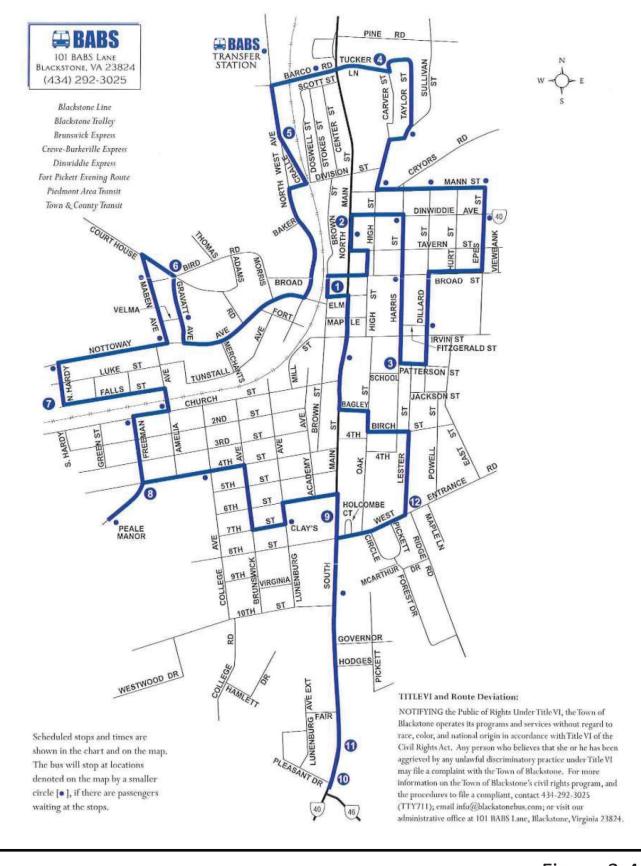
REVISED DECEMBER 1, 2011

FARE 50¢



THE BUS IS EQUIPPED WITH A WHEELCHAIR LIFT FOR THE DISABLED. PLEASE ASK THE DRIVER FOR HELP IF YOU NEED ASSISTANCE WHEN BOARDING THE BUS.

THE BLACKSTONE AREA BUS SYSTEM IS SPONSORED BY THE TOWN OF BLACKSTONE. WITH ASSISTANCE FROM THE VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION.



Note: the image above shows updated route and schedule information. Therefore, this figure supersedes Figure 3-4 of the 2012 TIA.

Source: Blackstone Area Bus System (BABS) website (http://blackstonebus.com/routes/pdf/babs_line.pdf)





FOREIGN AFFAIRS SECURITY TRAINING CENTER

Attachment CIntersection Worksheets

Existing AM 10/1/2014

HCM 2010 TWSC	
1: Cox Rd/Yellowhird Rd & US 460	

Existing AM 10/1/2014

Intersection										
Int Delay, s/veh	5.9									
Movement	EBL	EBT	EBR	WBL	WBT	WBR		NBL	NBT	NB
Vol, veh/h	1	144	14	241	93	2		11	7	(
Conflicting Peds, #/hr	0	0	0	0	0	0		0	0	
Sign Control	Free	Free	Free	Free	Free	Free		Stop	Stop	Sto
RT Channelized	-	-	None	-	-	None		-	-	Nor
Storage Length	125		50	100		100				
Veh in Median Storage, #	-	0			0				2	
Grade, %		0	-						0	
Peak Hour Factor	92	92	92	92	92	92		92	92	(
Heavy Vehicles, %	100	13	0	8	25	0		18	0	
Mymt Flow	100	157	15	262	101	2		12	8	10
With the William	,	107	10	202	101			12	Ü	
Major/Minor	Major1			Major2			M	inor1		
Conflicting Flow All	101	0	0	157	0	0		748	784	
Stage 1	-	-	-	-	-	-		159	159	
Stage 2	-	-	-	-	-	-		589	625	
Critical Hdwy	6.1	-	-	4.26				7.86	6.5	7.0
Critical Hdwy Stg 1	-	-	-	-	-	-		6.86	5.5	
Critical Hdwy Stg 2	-	-	-	-				6.86	5.5	
Follow-up Hdwy	3.2	-	-	2.28	-	-		3.68	4	3.:
Pot Cap-1 Maneuver	991	-	-	1378				273	327	9
Stage 1	-	-	-		-	-		783	770	
Stage 2	-	-	-	-	-	-		424	480	
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	991	-	-	1378	-	-		216	265	9!
Mov Cap-2 Maneuver	-	-	-	-	-	-		295	363	
Stage 1	-	-	-		-	-		782	769	
Stage 2	-	-	-	-	-	-		314	389	
Approach	EB			WB				NB		
HCM Control Delay, s	0.1			5.9				11		
HCM LOS								В		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	724	991	-	- 1378		-	421			
HCM Lane V/C Ratio	0.171	0.001	-	- 0.19	-	-	0.108			
HCM Control Delay (s)	11	8.6		- 8.2		-	14.6			
HCM Lane LOS	В	Α	-	- A			В			
HCM 95th %tile Q(veh)	0.6	0		- 0.7			0.4			

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	5	26	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	2	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	4	9
Mvmt Flow	5	28	12
Major/Minor	Minor2		
Conflicting Flow All	709	784	51
Stage 1	625	625	-
Stage 2	84	159	-
Critical Hdwy	7.5	6.58	7.08
Critical Hdwy Stg 1	6.5	5.58	-
Critical Hdwy Stg 2	6.5	5.58	-
Follow-up Hdwy	3.5	4.04	3.39
Pot Cap-1 Maneuver	325	320	984
Stage 1	444	471	
Stage 2	920	760	
Platoon blocked, %	,20	700	
Mov Cap-1 Maneuver	243	259	984
Mov Cap-1 Maneuver	382	344	704
Stage 1	444	381	
Stage 2	810	759	
Stage 2	010	137	•
Approach	SB		
HCM Control Delay, s	14.6		
HCM LOS	В		
	Б		
Minor Lane/Major Mvmt			

FASTC 2014 Existing AM Int 1-10.syn Cardno GS

Synchro 8 Light Report Page 1 FASTC 2014 Existing AM Int 1-10.syn Cardno GS

Synchro 8 Light Report Page 2

Intersection	4.4							
Int Delay, s/veh	4.4							
Movement		EBT	EBR		WBL	WBT	NBL	NBI
Vol, veh/h		80	2		181	100	1	3
Conflicting Peds, #/hr		0	0		0	0	0	(
Sign Control		Free	Free		Free	Free	Stop	Sto
RT Channelized		-	None		-	None	-	None
Storage Length		-	-		-	-	0	
Veh in Median Storage, #		0	-		-	0	0	
Grade, %		0	-		-	0	0	
Peak Hour Factor		92	92		92	92	92	92
Heavy Vehicles, %		5	0		2	15	0	2
Mvmt Flow		87	2		197	109	1	38
Major/Minor		Najor1		M	lajor2		Minor1	
Conflicting Flow All		0	0		89	0	590	88
Stage 1		-	-		-	-	88	
Stage 2		-	-			-	502	
Critical Hdwy		-	-		4.12	-	6.4	6.4
Critical Hdwy Stg 1		-	-		-	-	5.4	
Critical Hdwy Stg 2		-	-			-	5.4	
Follow-up Hdwy		-	-	:	2.218	-	3.5	3.489
Pot Cap-1 Maneuver		-	-		1506	-	474	920
Stage 1		-	-		-	-	940	
Stage 2		-	-		-	-	612	
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-		1506	-	408	920
Mov Cap-2 Maneuver		-	-		-	-	408	
Stage 1		-	-		-	-	940	
Stage 2		-	-		-	-	527	
Approach		EB			WB		NB	
HCM Control Delay, s		0			5		9.2	
HCM LOS							A	
Minor Long/Major Mumt	NDI n4	EDT	EDD	WDI	WBT			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR					
Capacity (veh/h)	889 0.044	-	-	1506	-			
HCM Lane V/C Ratio		-	-	0.131	-			
LICM Control Doloy (c)								
HCM Control Delay (s) HCM Lane LOS	9.2 A			7.7 A	0 A			

Intersection											
Int Delay, s/veh	5.9										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NDT	NBI
Vol. veh/h	9	39	125		16	18	WDR 8		INDL 7	NBT 18	INDI
Conflicting Peds, #/hr	0	0	125		0	0	0		0	0	(
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	
RT Channelized	riee	riee -	None		riee -	riee -	None		Siup -	Siup -	Stop
Storage Length		-	50				None		150		2!
Veh in Median Storage, #		0	-			0			130	0	Z
Grade, %	-	0	-			0	-		-	0	
Peak Hour Factor	92	92	92		95	95	95		92	92	92
Heavy Vehicles, %	0	18	0		0	11	63		0	12	72
Mymt Flow	10	42	136		17	19	8		8	20	,
WWIIICTIOW	10	72	130		17	17			U	20	
Major/Minor	Major1				Major2				Minor1		
Conflicting Flow All	27	0	0		42	0	0		212	123	42
Stage 1	-	-	-		-	-	-		62	62	
Stage 2	-	-	-		-	-	-		150	61	
Critical Hdwy	4.1	-	-		4.1	-	-		7.1	6.62	6.2
Critical Hdwy Stg 1	-	-	-		-	-	-		6.1	5.62	
Critical Hdwy Stg 2	-	-	-		-	-	-		6.1	5.62	
Follow-up Hdwy	2.2	-	-		2.2	-	-		3.5	4.108	3.3
Pot Cap-1 Maneuver	1600	-	-		1580	-	-		749	749	1034
Stage 1	-	-	-		-	-	-		954	824	
Stage 2	-	-	-		-	-	-		857	825	
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1600	-	-		1580	-	-		601	736	1034
Mov Cap-2 Maneuver	-	-	-		-	-	-		601	736	
Stage 1	-	-	-		-	-	-		947	818	
Stage 2		-	-		-	-	-		662	816	
Approach	EB				WB				NB		
HCM Control Delay, s	0.4				2.8				10.2		
HCM LOS	0.4				2.0				10.2 B		
HCW LOS									Б		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	601	736	1034	1600	-	-	1580	-	-	766	
HCM Lane V/C Ratio	0.013	0.027	0.001	0.006	-	-	0.011	-	-	0.258	
HCM Control Delay (s)	11.1	10	8.5	7.3	0	-	7.3	0	-	11.3	
HCM Lane LOS	В	В	Α	Α	Α	-	Α	Α	-	В	
HCM 95th %tile Q(veh)	0	0.1	0	0			0			1	

Intersection Int Delay, s/veh

0

92

0

Free

None

92

Free Free

92

0 2 97

Major1

4.1

2.2

1494

1494

Stop

None

92

6.53 6.5

860

860

4 3.597

0 33

Intersection				
Int Delay, s/veh	2.1			
Movement	EBL	EBT	EBR	WBL
Vol, veh/h	0	0	0	10
Conflicting Peds, #/hr	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop
RT Channelized	·-	-	None	-
Storage Length	-	-	-	-
Veh in Median Storage, #	-	0	-	-
Grade, %	-	0	-	-
Peak Hour Factor	92	92	92	92
Heavy Vehicles, %	0	0	0	0
Mvmt Flow	0	0	0	11
Major/Minor	Minor2			Minor1
Conflicting Flow All	364	380	109	361
Stage 1	246	246	-	115
Stage 2	118	134	-	246
Critical Hdwy	7.1	6.5	6.2	7.1
Critical Hdwy Stg 1	6.1	5.5	-	6.1
Critical Hdwy Stg 2	6.1	5.5	-	6.1
Follow-up Hdwy	3.5	4	3.3	3.5
Pot Cap-1 Maneuver	596	556	950	598
Stage 1	762	706	-	895
Stage 2	891	789	-	762
Platoon blocked, %				
Mov Cap-1 Maneuver	569	528	950	575
Mov Cap-2 Maneuver	569	528	-	575
Stage 1	762	671	-	895
Stage 2	884	789	-	724
Approach	EB			WB
Approach	0			10.6
HCM Control Delay, s HCM LOS	A			10.6 B
HCIVI LU3	А			Б
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1 WBLn1
Capacity (veh/h)	1494	TVD1	ווטוו	- 657

Α.				ь				
NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR	
1494	-	-	-	657	1451	-	-	
-	-	-	-	0.026	0.047	-	-	
0	-	-	0	10.6	7.6	0	-	
Α	-	-	Α	В	Α	Α	-	
0	-	-	-	0.1	0.1	-	-	
	1494	1494 - 0 - A -	1494	1494 0 A A	NBL NBT NBR EBLn1 WBLn1 1494 - - - 657 - - - 0.026 0 - - 0 10.6 A - - A B	NBL NBT NBR EBLn1 WBLn1 SBL 1494 - - - 657 1451 - - - - 0.047 0 - - 0 10.6 7.6 A - - A B A	NBL NBT NBR EBLn1 WBLn1 SBL SBT 1494 - - - 657 1451 - - - - 0.026 0.047 - 0 - - 0 7.6 0 A - - A B A A	NBL NBT NBR EBLn1 WBLn1 SBL SBT SBR 1494 - - - 657 1451 - - - - - 0.026 0.047 - - 0 - - 0 10.6 7.6 0 - A - - A B A A -

Movement	SBL	SBT	SBR
Vol, veh/h	11	166	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-		-
Veh in Median Storage, #	-	0	
Grade, %	-	0	
Peak Hour Factor	92	92	92
Heavy Vehicles, %	18	1	0
Mymt Flow	12	180	5
WWW. Tiow	12	100	J
Major/Minor	Minor2		
Conflicting Flow All	129	119	23
Stage 1	57	57	-
Stage 2	72	62	-
Critical Hdwy	7.28	6.51	6.2
Critical Hdwy Stg 1	6.28	5.51	-
Critical Hdwy Stg 2	6.28	5.51	-
Follow-up Hdwy	3.662	4.009	3.3
Pot Cap-1 Maneuver	808	773	1060
Stage 1	916	849	-
Stage 2	899	845	-
Platoon blocked, %			
Mov Cap-1 Maneuver	780	759	1060
Mov Cap-2 Maneuver	780	759	-
Stage 1	910	840	
Stage 2	870	839	
Olago E	0.0	007	
Approach	SB		
HCM Control Delay, s	11.3		
HCM LOS	В		
Minor Lane/Major Mvmt			

Existing AM 10/1/2014

Interception			
Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	63	100	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-		None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	0
Mymt Flow	68	109	0
Major/Minor	Major2		
Conflicting Flow All	134	0	0
Stage 1	134	-	-
Stage 2			
	4.10	-	-
Critical Hdwy	4.12		-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1451	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1451	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Approach	SB		
HCM Control Delay, s	2.9		
HCM LOS	2.7		
Minor Lane/Major Mvmt			

Intersection								
Int Delay, s/veh	5.3							
Movement	EBL		EBR		NBL	NBT	SBT	SB
Vol, veh/h	99		44		5	23	100	1
Conflicting Peds, #/hr	0		0		0	0	0	
Sign Control	Stop		Stop		Free	Free	Free	Fre
RT Channelized	-		None		-	None	-	Non
Storage Length	0		-		-	-	-	
Veh in Median Storage, #	0		-		-	0	0	
Grade, %	0		-		-	0	0	
Peak Hour Factor	92		92		92	92	92	9
Heavy Vehicles, %	2		2		0	9	2	
Mvmt Flow	108		48		5	25	109	1
Major/Minor	Minor2				Major1		Major2	
Conflicting Flow All	150		114		120	0	-	
Stage 1	114		-		-			
Stage 2	36				-		-	
Critical Hdwy	6.42		6.22		4.1			
Critical Hdwy Stg 1	5.42		-		-		-	
Critical Hdwy Stg 2	5.42				-			
Follow-up Hdwy	3.518		3.318		2.2	-	-	
Pot Cap-1 Maneuver	842		939		1480		-	
Stage 1	911		-		-		-	
Stage 2	986		-		-		-	
Platoon blocked, %						-	-	
Mov Cap-1 Maneuver	839		939		1480		-	
Mov Cap-2 Maneuver	839		-		-	-	-	
Stage 1	911				-		-	
Stage 2	983		-		-	-		
Approach	EB				NB		SB	
HCM Control Delay, s	10.1				1.3		0	
HCM LOS	В				1.0		,	
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	1480	-	867	- 301	JUIN -			
HCM Lane V/C Ratio	0.004		0.179	-				
HCM Control Delay (s)	7.4	0	10.1					
HCM Lane LOS	7.4 A	A	В					
HCM 95th %tile Q(veh)	0	-	0.7					

HCM 95th %tile Q(veh)

-				
Intersection				
Int Delay, s/veh				
Movement	SBL	SBT	SBR	
Vol. veh/h	1	1	6	
Conflicting Peds, #/hr	0	0	0	
Sign Control	Stop	Stop	Stop	
RT Channelized	-	-	None	
Storage Length	-	-	-	
Veh in Median Storage, #	-	0	-	
Grade, %	-	0	-	
Peak Hour Factor	92	92	92	
Heavy Vehicles, %	100	0	0	
Mvmt Flow	1	1	7	
Major/Minor	Minor2			
Conflicting Flow All	131	141	9	
Stage 1	11	11	7	
Stage 2	120	130	-	
Critical Hdwy	8.1	6.5	6.2	
Critical Hdwy Stg 1	7.1	5.5	0.2	
Critical Hdwy Stg 2	7.1	5.5	-	
Follow-up Hdwy	4.4	4	3.3	
Pot Cap-1 Maneuver	659	754	1079	
Stage 1	806	890	-	
Stage 2	694	792	-	
Platoon blocked, %				
Mov Cap-1 Maneuver	658	752	1079	
Mov Cap-2 Maneuver	658	752	-	
Stage 1	805	889	-	
Stage 2	693	791	-	
Approach	SB			
HCM Control Delay, s	8.8			
HCM LOS	A			

Minor Lane/Major Mvmt

Intersection									
Int Delay, s/veh	1.3								
,									
Movement	EBL	EBT	EBR	WB	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	98	20		l 8	0	11	0	0
Conflicting Peds, #/hr	0	0	0) 0	0	0	0	0
Sign Control	Free	Free	Free	Fre	e Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None			None	-	-	None
Storage Length		-	-			-		-	-
Veh in Median Storage, #	-	0	-		- 0	-	-	0	-
Grade, %	-	0	-		- 0	-	-	0	-
Peak Hour Factor	92	92	92	9:		92	92	92	92
Heavy Vehicles, %	0	0	10		0	0	18	0	0
Mvmt Flow	1	107	22		1 9	0	12	0	0
Major/Minor	Major1			Major	2		Minor1		
Conflicting Flow All	9	0	0	12	3 0	0	135	131	117
Stage 1	-	-	-			-	120	120	-
Stage 2	-	-	-			-	15	11	-
Critical Hdwy	4.1	-	-	4.	-	-	7.28	6.5	6.2
Critical Hdwy Stg 1	-	-	-			-	6.28	5.5	-
Critical Hdwy Stg 2	-	-	-			-	6.28	5.5	-
Follow-up Hdwy	2.2	-	-	2.:	-	-	3.662	4	3.3
Pot Cap-1 Maneuver	1624	-	-	1470) -	-	801	763	941
Stage 1	-	-	-			-	847	800	-
Stage 2	-	-	-			-	965	890	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1624	-	-	1470) -	-	794	761	941
Mov Cap-2 Maneuver	-	-	-			-	794	761	-
Stage 1	-	-	-			-	846	799	-
Stage 2	-	-	-		-	-	957	889	-
Approach	EB			WE			NB		
HCM Control Delay, s	0.1			0.8	3		9.6		
HCM LOS							A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WB		WBR	SBLn1		
Capacity (veh/h)	794	1624	-	- 1470		-	951		
HCM Lane V/C Ratio	0.015	0.001	-	- 0.00		-	0.009		
HCM Control Delay (s)	9.6	7.2	0	- 7.		-	8.8		
HCM Lane LOS	Α	Α	Α	- 1	۱ A	-	Α		

0 0 - - 0

Intersection

HCM Control Delay (s)

HCM Lane LOS HCM 95th %tile Q(veh)

Intersection			
Int Delay, s/veh			
,			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control			
RT Channelized	Stop	Stop	Stop
		-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	0
Mvmt Flow	0	0	1
Major/Minor	Minor2		
Conflicting Flow All	107	113	4
	4	4	4
Stage 1			
Stage 2	103	109	-
Critical Hdwy	7.1	6.5	6.2
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.3
Pot Cap-1 Maneuver	877	781	1085
Stage 1	1024	897	-
Stage 2	908	809	-
Platoon blocked, %			
Mov Cap-1 Maneuver	876	780	1085
Mov Cap-2 Maneuver	876	780	-
Stage 1	1023	897	
Stage 2	907	808	
-1-9			
Approach	SB		
HCM Control Delay, s	8.3		
HCM LOS	Α		

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	0
Mvmt Flow	0	0	1
Major/Minor	Minor2		
Conflicting Flow All	107	113	4
Stage 1	4	4	
Stage 2	103	109	
Critical Hdwy	7.1	6.5	6.2
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	
Follow-up Hdwy	3.5	4	3.3
Pot Cap-1 Maneuver	877	781	1085
Stage 1	1024	897	-
Stage 2	908	809	-
Platoon blocked, %			
Mov Cap-1 Maneuver	876	780	1085
Mov Cap-2 Maneuver	876	780	-
Stage 1	1023	897	-
Stage 2	907	808	-
Approach	SB		
HCM Control Delay, s	8.3		
HCM LOS	6.3 A		
HOW EUD	A		
Minor Lane/Major Mvmt			

IIIIersection									
Int Delay, s/veh	0.5								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBF
Vol, veh/h	1	88	10	0	4	0	4	0	INDIN
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stor
RT Channelized	-	-	None	-	-	None	Stop -	Jiop -	None
Storage Length		-	-		-	TWOTIC -		-	NOTIC
Veh in Median Storage, #		0			0			0	
Grade, %		0			0	-		0	
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	10	0	0	0	18	0	(
Mymt Flow	1	96	11	0	4	0	4	0	C
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	4	0	0	107	0	0	108	107	101
Stage 1	-	-		-	-	-	103	103	
Stage 2		-	-	-	-	-	5	4	
Critical Hdwy	4.1	-		4.1	-	-	7.28	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.28	5.5	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.28	5.5	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.662	4	3.3
Pot Cap-1 Maneuver	1631	-	-	1497	-	-	834	787	960
Stage 1	•	-	-	-	-	-	865	814	
Stage 2	-	-	-	-	-	-	977	897	
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1631	-	-	1497	-	-	833	786	960
Mov Cap-2 Maneuver	-	-	-	-	-	-	833	786	
Stage 1	-	-	-	-	-	-	864	813	
Stage 2	-	-	-		-	-	976	897	
Aurora	- FD			WB			ND		
Approach	EB						NB		
HCM Control Delay, s	0.1			0			9.3		
HCM LOS							A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	833	1631	-	- 1497	-	-	1085		
HCM Lane V/C Ratio	0.005	0.001					0.001		
LICM Control Doloy (s)	0.000	7.2	٥	0			0.001		

0

9.3 7.2

Intersection											
Int Delay, s/veh	6.1										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NB
Vol, veh/h	0	0	4		0	0	0		3	0	
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	F	ree	Free	Fre
RT Channelized	-	-	None		-	-	None		-	-	Non
Storage Length	-	-	-		-	-	-		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	9.
Heavy Vehicles, %	0	0	0		0	0	0		0	0	
Mvmt Flow	0	0	4		0	0	0		3	0	
Major/Minor	Minor2				Minor1			Ma	jor1		
Conflicting Flow All	8	9	1		10	8	1	IVIG	1	0	
Stage 1	1	1			7	7	- 1		-	-	
	7	8			3	1	-			-	
Stage 2 Critical Hdwy	7.1	6.5	6.2		7.1	6.5	6.2		4.1		
Critical Hdwy Stg 1	6.1	5.5	0.2		6.1	5.5	0.2		4.1	-	
Critical Hdwy Stg 2	6.1	5.5			6.1	5.5				-	
Follow-up Hdwy	3.5	3.3	3.3		3.5	4	3.3		2.2		
Pot Cap-1 Maneuver	1016	890	1090		1013	891	1090	1	635	-	
Stage 1	1010	899	1070		1013	894	1070	'	-	-	
Stage 2	1027	893			1020	899			-	-	
Platoon blocked, %	1020	093			1023	077				-	
Mov Cap-1 Maneuver	1014	888	1090		1007	889	1090	1	635	-	
Mov Cap-1 Maneuver	1014	888	1090		1007	889	1090		033	-	
Stage 1	1014	899			1018	892					
Stage 2	1025	891			1018	899			-	-	
Stage 2	1010	071			1021	077			-		
Approach	EB				WB				NB		
HCM Control Delay, s	8.3				0				5.4		
HCM LOS	А				Α						
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1635	-	- INDIX	1090	-	1635	- 351	-			
HCM Lane V/C Ratio	0.002		-	0.004	-	1033					
HCM Control Delay (s)	7.2	0		8.3	0	0					
HCM Lane LOS	7.2 A	A	-	0.3 A	A	A					
HCM 95th %tile Q(veh)	0	Α.		0		0					

Intersection				
Int Delay, s/veh				
Movement	SBL	SBT	SBR	
Vol, veh/h	0	1	0	
Conflicting Peds, #/hr	0	0	0	
Sign Control	Free	Free	Free	
RT Channelized	-	-	None	
Storage Length	-	-	-	
Veh in Median Storage, #	-	0	-	
Grade, %		0	-	
Peak Hour Factor	92	92	92	
Heavy Vehicles, %	0	0	0	
Mvmt Flow	0	1	0	
Major/Minor	Major2			
Conflicting Flow All	1	0	0	
Stage 1		-	-	
Stage 2		-	-	
Critical Hdwy	4.1	-	-	
Critical Hdwy Stg 1		-	-	
Critical Hdwy Stg 2	-	-	-	
Follow-up Hdwy	2.2	-	-	
Pot Cap-1 Maneuver	1635	-	-	
Stage 1	-	-	-	
Stage 2	-	-	-	
Platoon blocked, %		-	-	
Mov Cap-1 Maneuver	1635	-	-	
Mov Cap-2 Maneuver	-	-	-	
Stage 1	-	-	-	
Stage 2	•	-	-	
Approach	SB			
HCM Control Delay, s	0			
HCM LOS				
Minor Lane/Major Mymt				

-									
Intersection									
Int Delay, s/veh	0.7								
·									
Movement	EBL	EBT				WBT	WBR	SBL	SBR
Vol, veh/h	3	58				15	5	2	2
Conflicting Peds, #/hr	0	0				0	0	0	C
Sign Control	Free	Free				Free	Free	Stop	Stop
RŤ Channelized	-	None				-	None		None
Storage Length	-	-				-	-	0	
Veh in Median Storage, #	-	0				0	-	0	
Grade, %	-	0				0	-	0	
Peak Hour Factor	92	92				92	92	92	92
Heavy Vehicles, %	67	2				20	0	0	C
Mvmt Flow	3	63				16	5	2	2
Major/Minor	Major1					Major2		Minor2	
Conflicting Flow All	22	0				-	0	89	19
Stage 1	-					-		19	
Stage 2	-							70	
Critical Hdwy	4.77					-		6.4	6.2
Critical Hdwy Stg 1	-	-				-	-	5.4	
Critical Hdwy Stg 2		-				-		5.4	
Follow-up Hdwy	2.803	-				-	-	3.5	3.3
Pot Cap-1 Maneuver	1258	-				-	-	917	1065
Stage 1	-	-				-	-	1009	
Stage 2	-	-				-	-	958	
Platoon blocked, %		-				-	-		
Mov Cap-1 Maneuver	1258	-				-	-	915	1065
Mov Cap-2 Maneuver	-	-				-	-	915	
Stage 1	-	-				-	-	1009	
Stage 2	-	-				-	-	956	
Approach	EB					WB		SB	
HCM Control Delay, s	0.4					0		8.7	
HCM LOS								A	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1				
Capacity (veh/h)	1258	-	-	-	984				
HCM Lane V/C Ratio	0.003	-	-	-	0.004				
HCM Control Delay (s)	7.9	0	-	-	8.7				
HCM Lane LOS	Α	Α	-	-	Α				
HCM 95th %tile Q(veh)	0	-	-	-	0				

Existing AM 10/22/2014

10: S. Main St & 8th St/W Entrance Rd

	→	•	-	•	•	Ť	>	ţ	
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	9	2	15	28	3	311	79	149	
v/c Ratio	0.05	0.01	0.08	0.05	0.01	0.60	0.18	0.20	
Control Delay	27.2	0.0	27.3	0.2	15.7	22.5	8.9	9.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.2	0.0	27.3	0.2	15.7	22.5	8.9	9.1	
Queue Length 50th (ft)	3	0	5	0	1	87	14	27	
Queue Length 95th (ft)	16	0	22	0	6	169	33	57	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	335	404	804	616	998	1352	502	1585	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.00	0.02	0.05	0.00	0.23	0.16	0.09	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 10: S. Main St & 8th St/W Entrance Rd

Existing AM 10/22/2014

	•	→	•	€	+	•	1	1	~	-	Į.	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्स	7		र्स	7	, N	1>		7	1	
Volume (veh/h)	1	7	2	13	1	26	3	190	96	73	136	1
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	190.0	169.6	190.0	178.7	190.0	184.5	162.6	190.0
Adj Flow Rate, veh/h	1	8	2	14	1	28	3	207	104	79	148	1
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	12	0	7	7	3	17	17
Cap, veh/h	20	160	154	162	12	232	497	321	161	383	751	5
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.29	0.29	0.29	0.07	0.47	0.47
Sat Flow, veh/h	210	1680	1615	1694	121	1442	1258	1123	564	1757	1613	11
Grp Volume(v), veh/h	9	0	2	15	0	28	3	0	311	79	0	149
Grp Sat Flow(s),veh/h/ln	1890	0	1615	1815	0	1442	1258	0	1687	1757	0	1624
Q Serve(g_s), s	0.2	0.0	0.1	0.4	0.0	0.9	0.1	0.0	8.5	1.5	0.0	2.8
Cycle Q Clear(g_c), s	0.2	0.0	0.1	0.4	0.0	0.9	0.1	0.0	8.5	1.5	0.0	2.8
Prop In Lane	0.11		1.00	0.93		1.00	1.00		0.33	1.00		0.01
Lane Grp Cap(c), veh/h	180	0	154	173	0	232	497	0	483	383	0	756
V/C Ratio(X)	0.05	0.00	0.01	0.09	0.00	0.12	0.01	0.00	0.64	0.21	0.00	0.20
Avail Cap(c_a), veh/h	360	0	308	866	0	782	1218	0	1449	604	0	1889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	21.5	21.6	0.0	18.8	13.4	0.0	16.4	11.4	0.0	8.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.2	0.0	0.0	1.4	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.2	0.0	0.4	0.0	0.0	4.1	0.7	0.0	1.3
LnGrp Delay(d),s/veh	21.7	0.0	21.5	21.8	0.0	19.1	13.4	0.0	17.8	11.6	0.0	8.4
LnGrp LOS	С		С	С		В	В		В	В		Α
Approach Vol, veh/h		11			43			314			228	
Approach Delay, s/veh		21.6			20.0			17.8			9.5	
Approach LOS		С			С			В			Α	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.0	9.4	21.0		11.0		30.4				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (g_c+l1), s		2.9	3.5	10.5		2.2		4.8				
Green Ext Time (p_c), s		0.1	0.1	3.3		0.0		3.4				
Intersection Summary												
HCM 2010 Ctrl Delay			14.8									
HCM 2010 LOS			В									

FASTC 2014 Existing AM Int 1-10.syn Cardno GS

Synchro 8 Light Report Page 2

	•	•	1	†	Ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	10	91	91	127	123	21
v/c Ratio	0.03	0.19	0.11	0.08	0.16	0.03
Control Delay	12.8	3.1	2.6	2.0	10.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	3.1	2.6	2.0	10.9	6.5
Queue Length 50th (ft)	1	0	0	0	12	0
Queue Length 95th (ft)	12	14	22	28	61	12
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1291	827	1042	1727	1634	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	0.09	0.07	0.08	0.01
Intersection Summary						

	۶	•	1	†	ţ	4
Movement	EBL	EBR	NBL	NBT	SBT	SBR
ane Configurations	*	7	*	†	↑	7
Volume (veh/h)	9	84	84	117	113	19
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	171.2	172.7	179.2	172.7	166.7	190.0
Adj Flow Rate, veh/h	10	91	91	127	123	21
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	10	6	10	14	0
Cap, veh/h	206	310	598	903	438	425
Arrive On Green	0.13	0.13	0.08	0.52	0.26	0.26
Sat Flow, veh/h	1630	1468	1707	1727	1667	1615
Grp Volume(v), veh/h	10	91	91	127	123	21
Grp Sat Flow(s), veh/h/ln	1630	1468	1707	1727	1667	1615
Q Serve(q s), s	0.2	1.8	1.1	1.3	2.0	0.3
Cycle Q Clear(g_c), s	0.2	1.8	1.1	1.3	2.0	0.3
Prop In Lane	1.00	1.00	1.00	1.3	2.0	1.00
Lane Grp Cap(c), veh/h	206	310	598	903	438	425
V/C Ratio(X)	0.05	0.29	0.15	0.14	0.28	0.05
Avail Cap(c a), veh/h	1191	1197	1203	3080	1949	1888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	11.4	6.6	4.2	10.0	9.4
Incr Delay (d2), s/veh	0.1	0.6	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.1	0.0	0.1	0.0	0.1	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.0	0.6	0.0	0.0
			6.7	4.2	10.2	9.4
LnGrp Delay(d),s/veh	13.3	12.0				
LnGrp LOS	B	В	A	A 010	B	A
Approach Vol, veh/h	101			218	144	
Approach Delay, s/veh	12.1			5.3	10.1	
Approach LOS	В			Α	В	
Timer	1	2	3	4	5	6
Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		23.9		10.3	8.9	15.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		61.0		25.0	15.0	40.0
Max Q Clear Time (g_c+l1), s		3.3		3.8	3.1	4.0
Green Ext Time (p_c), s		1.1		0.3	0.1	1.1
Intersection Summary						
HCM 2010 Ctrl Delay			8.3			
HCM 2010 LOS			A			
10111 2010 200			,,			

FASTC 2014 Existing AM Int 11-18.syn
Cardno GS
Synchro 8 Light Report
Page 1

FASTC 2014 Existing AM Int 11-18.syn Cardno GS Synchro 8 Light Report Page 2

Queues 12: N. Main St & Dinwiddie Ave Existing AM 10/22/2014

	٠	→	•	←	†	-	Ţ
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	8	18	18	30	137	99	137
v/c Ratio	0.02	0.05	0.04	0.08	0.30	0.21	0.19
Control Delay	26.3	25.8	24.9	13.1	23.2	13.6	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	25.8	24.9	13.1	23.2	13.6	13.0
Queue Length 50th (ft)	3	6	7	2	45	26	36
Queue Length 95th (ft)	15	23	23	23	96	54	70
Internal Link Dist (ft)		598		847	888		606
Turn Bay Length (ft)	100		150			100	
Base Capacity (vph)	476	497	952	827	1042	611	1471
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.04	0.02	0.04	0.13	0.16	0.09
Intersection Summary							

HCM 2010 Signalized Intersection Summary 12: N. Main St & Dinwiddie Ave

Existing AM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1		7	1>		*	1		*	1≽	
Volume (veh/h)	7	16	1	17	5	23	0	94	32	91	115	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	176.7	190.0	190.0	175.1	190.0	182.7	171.2	190.0
Adj Flow Rate, veh/h	8	17	1	18	5	25	0	102	35	99	125	12
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	315	309	18	212	30	150	114	296	102	480	652	63
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.00	0.24	0.24	0.09	0.42	0.42
Sat Flow, veh/h	1810	1777	105	1810	257	1284	1272	1247	428	1740	1539	148
Grp Volume(v), veh/h	8	0	18	18	0	30	0	0	137	99	0	137
Grp Sat Flow(s), veh/h/ln	1810	0	1882	1810	0	1541	1272	0	1675	1740	0	1686
Q Serve(q s), s	0.2	0.0	0.5	0.6	0.0	1.1	0.0	0.0	4.3	2.4	0.0	3.2
Cycle Q Clear(g_c), s	0.2	0.0	0.5	0.6	0.0	1.1	0.0	0.0	4.3	2.4	0.0	3.2
Prop In Lane	1.00		0.06	1.00		0.83	1.00		0.26	1.00		0.09
Lane Grp Cap(c), veh/h	315	0	328	212	0	181	114	0	398	480	0	715
V/C Ratio(X)	0.03	0.00	0.05	0.08	0.00	0.17	0.00	0.00	0.34	0.21	0.00	0.19
Avail Cap(c_a), veh/h	430	0	447	859	0	732	517	0	928	735	0	1495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	21.8	24.9	0.0	25.1	0.0	0.0	20.0	14.0	0.0	11.4
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.2	0.0	0.6	0.0	0.0	0.7	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.3	0.3	0.0	0.5	0.0	0.0	2.1	1.1	0.0	1.5
LnGrp Delay(d),s/veh	21.7	0.0	21.8	25.1	0.0	25.7	0.0	0.0	20.7	14.2	0.0	11.6
LnGrp LOS	C	0.0	C	C	0.0	C	0.0	0.0	C	В	0.0	В
Approach Vol. veh/h		26			48			137	-		236	
Approach Delay, s/veh		21.8			25.5			20.7			12.7	
Approach LOS		C			C			C			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	•	8				
Phs Duration (G+Y+Rc), s		17.0	11.8	21.0		13.4		32.8				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (q_c+l1), s		2.5	4.4	6.3		3.1		5.2				
Green Ext Time (p_c), s		0.1	0.1	2.5		0.2		2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			17.1									
HCM 2010 CIT Delay			17.1									

HCM 2010 LOS

Intersection								
Int Delay, s/veh	1.3							
in Boldy, siven	1.5							
Movement		EBT	EBR		WBL	WBT	NBL	NBR
Vol, veh/h		18	11		2	46	5	7
Conflicting Peds, #/hr		0	0		0	0	0	0
Sign Control		Free	Free		Free	Free	Stop	Stop
RT Channelized		-	None		-	None	- Stop	None
Storage Length			100		247	-	0	-
Veh in Median Storage, #		0	-			0	0	-
Grade, %		0	-		-	0	0	
Peak Hour Factor		92	92		92	92	92	92
Heavy Vehicles, %		2	2		2	2	2	2
Mymt Flow		20	12		2	50	5	8
Major/Minor		Major1			Major2		Minor1	
Conflicting Flow All		0	0		20	0	74	20
Stage 1		-	-		-	-	20	-
Stage 2		-	-		-		54	
Critical Hdwy					4.12		6.42	6.22
Critical Hdwy Stg 1					-		5.42	-
Critical Hdwy Stg 2							5.42	-
Follow-up Hdwy					2.218		3.518	3.318
Pot Cap-1 Maneuver			-		1596	-	930	1058
Stage 1		-	-		-	-	1003	-
Stage 2		-	-		-		969	
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-		1596	-	929	1058
Mov Cap-2 Maneuver		-	-		-	-	929	-
Stage 1		-	-		-	-	1003	-
Stage 2		-	-		-	-	968	-
Approach		EB			WB		NB	
HCM Control Delay, s		0			0.3		8.6	
HCM LOS							A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT			
Capacity (veh/h)	1000	-	-	1596	-			
HCM Lane V/C Ratio	0.013	-	-	0.001	-			
HCM Control Delay (s)	8.6	-	-	7.3	-			
HCM Lane LOS	Α	-	-	Α	-			
HCM 95th %tile Q(veh)	0	-	-	0	-			

Intersection Int Delay, s/veh	0					
iiii Deiay, S/veii	U					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	5	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0			-	•	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	1	0	0	0
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2	0	0	0		0
Stage 1	0	-	-	-	-	-
Stage 2	2	-	-			-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1021	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1021	-	-	-	-	-
Mov Cap-2 Maneuver	1021	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
	55				0.0	
Approach	EB		NB 0		SB0	
HCM Control Delay, s HCM LOS			0		U	
HCM LOS	-					
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	-					
HCM Lane V/C Ratio						
HCM Control Delay (s)	-					
HCM Lane LOS	-					
HCM 95th %tile Q(veh)						

Int Delay, s/veh	2.5							
int belay, siven	2.5							
Movement	EBL		EBR		NBL	NBT	SBT	SBF
Vol, veh/h	8		0		0	2	4	1:
Conflicting Peds, #/hr	0		0		0	0	0	(
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized			None		-	None	-	None
Storage Length	0		-			-	-	
Veh in Median Storage, #	0				-	0	0	
Grade, %	0					0	0	
Peak Hour Factor	92		92		92	92	92	9:
Heavy Vehicles, %	2		2		2	2	2	
Mymt Flow	9		0		0	2	4	1.
WWIIICTIOW	,		U		U			
Major/Minor	Minor2			M	ajor1		Maior2	
Conflicting Flow All	13		11		18	0		-
Stage 1	11		- ''-		-	-		
Stage 2	2		-					
Critical Hdwy	6.42		6.22		4.12			
Critical Hdwy Stg 1	5.42		0.22		4.12		-	
Critical Hdwy Stg 2	5.42							
Follow-up Hdwy	3.518		3.318		2.218			
Pot Cap-1 Maneuver	1006		1070		1599			
			1070		1599		-	
Stage 1	1012		-		-	-	•	
Stage 2	1021		-		-			
Platoon blocked, %	100/		1070		1500	-	-	
Mov Cap-1 Maneuver	1006		1070		1599		-	
Mov Cap-2 Maneuver	1006		-		-	-	•	
Stage 1	1012		-		-	-	-	
Stage 2	1021		-		-	-		
	ED.				ND		CD	
Approach HCM Control Delay, s	EB 8.6				NB 0		SB 0	
HCM LOS	8.0 A				U		U	
HCW LUS	А							
Minor Lane/Major Mvmt	NBL	NBT E	BLn1	SBT	SBR			
Capacity (veh/h)	1599	- 1101	1006		- JUIK			
HCM Lane V/C Ratio	1377		0.009					
HCM Control Delay (s)	0		8.6					
HCM Lane LOS	A		Α.					
HCM 95th %tile Q(veh)	0		0					

Movement	Intersection Int Delay, s/veh	6.9								
Vol, veh/h 7 109 12 152 163 6 30 34 Conflicting Peds, #/hr 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 - - 0 2 2 Grade, % 9		0.,								
Conflicting Peds, #hr 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NB
Sign Control Free Free Free Free Free Free Free Free Free Stop Stop Stop Stop Stop Stop Stop Stop Stop Alphane - - None - - 0 - - 2 2 Genthulistic - 0 - - 0 - - 0 0 98 93 93 93 94 96 96 96 93 93 93 94 96 96 96 93 93 93 94 96 96 96 93 93 93 94 96 96 96 96 93 93 93 94 96 <t< td=""><td>Vol, veh/h</td><td>7</td><td>109</td><td>12</td><td>152</td><td>163</td><td>6</td><td>30</td><td>34</td><td>22</td></t<>	Vol, veh/h	7	109	12	152	163	6	30	34	22
RT Channelized	Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	
Storage Length	Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Sto
Veh in Median Storage, # - 0 - - 0 - - 2 Grade, % - 0 - - 0 - - 0 Peak Hour Factor 92 92 92 96 96 96 93 93 Heavy Vehicles, % 0 18 31 11 20 0 8 3 Mymt Flow 8 118 13 158 170 6 32 37 Major/Minor Major Major Minor1 Minor1 Conflicting Flow All 70 0 0 118 0 0 546 620 Stage 1 - - - - - - 134 134 Stage 2 -	RT Channelized	-	-		-	-		-	-	Non
Grade, % - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -	Storage Length	125	-	50	100	-	100	-	-	
Peak Hour Factor 92 92 92 96 96 96 93 93 Heavy Vehicles, % 0 18 31 11 20 0 8 3 Mwnt Flow 8 118 13 158 170 6 32 37 Major/Minor Major Major Minor Minor Minor Minor Minor Conflicting Flow All 170 0 0 118 0 0 546 620 Stage 1 - - - - - - 134	Veh in Median Storage, #	-	0	-	-	0	-	-	2	
Heavy Vehicles, %	Grade, %	-	0	-	-	0	-	-	0	
Mymit Flow 8 118 13 158 170 6 32 37 Major/Minor Major1 Major2 Minor1 Conflicting Flow All 170 0 0 118 0 0 546 620 Stage 1 - - - - - 134 134 Stage 2 - - - - - 412 486 Critical Hdwy 4.1 - - 4.32 - - 7.66 6.56 Critical Hdwy Stg 1 - - - - - 6.66 5.56 Critical Hdwy Stg 2 - - - - - 6.66 5.56 Critical Hdwy Stg 2 - - - - - 6.66 5.56 Critical Hdwy Stg 2 - - - 2.31 - 3.58 4.03 Pot Cap-1 Maneuver 1420 - 1405 - -<	Peak Hour Factor	92	92	92	96	96	96	93	93	9
Major/Minor	Heavy Vehicles, %	0	18			20	0			
Conflicting Flow All	Mvmt Flow	8	118	13	158	170	6	32	37	23
Conflicting Flow All										
Stage 1	Major/Minor	Major1			Major2			Minor1		
Stage 2	Conflicting Flow All	170	0	0	118	0	0			5
Critical Hdwy 4.1 - - 4.32 - - 7.66 6.56 Critical Hdwy Stg 1 - - - - - - 6.66 5.56 Critical Hdwy Stg 2 - - - - - - 6.66 5.56 Critical Hdwy Stg 1 - - - - - 6.66 5.56 Critical Hdwy Stg 1 - - - - - 6.66 5.56 Critical Hdwy Stg 1 - - - - - 6.66 5.56 Critical Hdwy Stg 1 - - - - - 6.66 5.56 Critical Hdwy Stg 1 - <	Stage 1	-	-	-	-	-	-	134	134	
Critical Hdwy Stg 1 - - - - 6.66 5.56 Critical Hdwy Stg 2 - - - - 6.66 5.56 Follow-up Hdwy 2.2 - - 2.31 - 3.58 4.03 Pot Cap-1 Maneuver 1420 - - 1405 - - 838 782 Stage 1 - - - - - 572 547 Platoon blocked, % - - - - 572 547 Platoon blocked, % - - - - 354 353 Mov Cap-1 Maneuver 1420 - - 1405 - - 354 353 Mov Cap-2 Maneuver - - - - - 833 778 Stage 2 - - - - - 833 778 Stage 2 - - - - - 88 88 Approach EB WB WB NB NB	Stage 2	-	-	-	-	-	-	412	486	
Critical Hdwy Stig 2 - - - - - - 6.66 5.56 Follow-up Hdwy 2.2 - 2.31 - 3.58 4.03 Pot Cap-1 Maneuver 1420 - 1405 - 408 400 Stage 1 - - - - - 838 782 Stage 2 - - - - - - 572 547 Platoon blocked, % - - - - - - 572 547 Platoon blocked, % - - - - - - 572 547 Platoon blocked, % - - - - - - - - - - - - 547 547 547 543 353 353 363 353 363 353 364 353 363 778 3833 778 3833 778 3833 778 3833 778 3833 778 3480 485 485 4	Critical Hdwy	4.1	-	-	4.32	-	-	7.66	6.56	
Follow-up Hdwy 2.2 - 2.31 - 3.58 4.03 Pot Cap-1 Maneuver 1420 - 1405 - 408 400 Stage 1 838 782 Stage 2 572 547 Platoon blocked, % Mov Cap-1 Maneuver 1420 - 1405 5572 547 Mov Cap-1 Maneuver 1420 - 1405 - 354 353 Mov Cap-2 Maneuver 443 445 Stage 1 833 778 Stage 2 480 485 Approach EB WB NB HCM Control Delay, s 0.4 3.7 12.7 HCM LOS B Minor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1 Capacity (veh/h) 773 1420 - 1405 - 507 HCM Lane V/C Ratio 0.395 0.005 - 0.113 - 0.064	Critical Hdwy Stg 1		-	-	-	-	-	6.66	5.56	
Pot Cap-1 Maneuver 1420 - 1405 - - 408 400 Stage 1 - - - - - 572 547 Platoon blocked, % - - - - - - 572 547 Platoon blocked, % -	Critical Hdwy Stg 2	-	-	-	-	-	-	6.66	5.56	
Stage 1			-	-		-	-			3.3
Stage 2	Pot Cap-1 Maneuver	1420	-	-	1405	-	-			98
Platoon blocked, % -	Stage 1	-	-	-		-	-	838	782	
Mov Cap-1 Maneuver 1420 - 1405 - - 354 353 Mov Cap-2 Maneuver - - - - - - 443 445 Stage 1 - - - - - 833 778 Stage 2 - - - - - 480 485 Approach EB WB NB NB HCM Control Delay, s 0.4 3.7 12.7 HCM LOS B B Minor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1 Capacity (veh/h) 773 1420 - 1405 - 507 HCM Lane V/C Ratio 0.395 0.005 - 0.113 - 0.064	Stage 2	-	-	-	-	-	-	572	547	
Mov Cap-2 Maneuver - - - - 443 445 Stage 1 - - - - - 833 778 Stage 2 - - - - - 480 485 Approach EB WB NB NB HCM Control Delay, S 0.4 3.7 12.7 HCM LOS B B NB WBT WBT SBLn1 Capacity (veh/h) 773 1420 - 1405 - 507 HCM Lane V/C Ratio 0.395 0.005 - 0.113 - 0.064			-	-		-	-			
Stage 1 - </td <td></td> <td>1420</td> <td>-</td> <td>-</td> <td>1405</td> <td>-</td> <td>-</td> <td></td> <td></td> <td>98</td>		1420	-	-	1405	-	-			98
Approach EB WB NB HCM Control Delay, s 0.4 3.7 12.7 HCM LOS B B WB WB Minor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1 Capacity (veh/h) 773 1420 - - 1405 - - 507 HCM Lane V/C Ratio 0.395 0.005 - - 0.113 - - 0.064	Mov Cap-2 Maneuver	-	-	-	-	-	-			
Approach EB WB NB HCM Control Delay, s 0.4 3.7 12.7 HCM LOS B Minor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1 Capacity (veh/h) 773 1420 - 1405 - - 507 HCM Lane V/C Ratio 0.395 0.005 - 0.113 - 0.064		-	-	-	-	-	-			
HCM Control Delay, s	Stage 2	-	-	-		-	-	480	485	
HCM Control Delay, s										
HCM LOS B B										
Minor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1 Capacity (veh/h) 773 1420 - - 1405 - - 507 HCM Lane V/C Ratio 0.395 0.005 - - 0.113 - - 0.064		0.4			3.7					
Capacity (veh/h) 773 1420 - 1405 - 507 HCM Lane V/C Ratio 0.395 0.005 - 0.113 - 0.064	HCM LOS							В		
Capacity (veh/h) 773 1420 - 1405 - 507 HCM Lane V/C Ratio 0.395 0.005 - 0.113 - 0.064	Minor Lang/Major Must	NDI1	EDI	EDT	EDD WDI	WDT	WDD	CDI p1		_
HCM Lane V/C Ratio 0.395 0.005 0.113 0.064										
				-		-	-			
	HCM Control Dolay (c)			-	- 0.113	-	-	12.4		

- 7.9

12.7 7.5

1.9

B A

Movement	SBL	SBT	SBR
Vol, veh/h	2	20	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-		None
Storage Length	-	-	-
Veh in Median Storage, #	-	2	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	5	13
Mymt Flow	2	22	9
Major/Minor	Minor2		
Conflicting Flow All	579	620	85
Stage 1	486	486	-
Stage 2	93	134	-
Critical Hdwy	7.5	6.6	7.16
Critical Hdwy Stg 1	6.5	5.6	-
Critical Hdwy Stg 2	6.5	5.6	
Follow-up Hdwy	3.5	4.05	3.43
Pot Cap-1 Maneuver	403	396	923
Stage 1	537	542	
Stage 2	909	777	
Platoon blocked, %			
Mov Cap-1 Maneuver	261	349	923
Mov Cap-2 Maneuver	408	439	-
Stage 1	534	481	
Stage 2	655	773	
· ·			
Approach	SB		
HCM Control Delay, s	12.6		

HCM Control Delay (s)

HCM 95th %tile Q(veh)

HCM Lane LOS

12.6

В

0.2

3.3

Intersection
Int Delay, s/veh

-											
Intersection											
Int Delay, s/veh	6.7										
Movement	EBL	EBT	EBR	W	BL	WBT	WBR		NBL	NBT	NBR
Vol. veh/h	9	42	12		9	56	13		55	111	17
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0
Sign Control	Free	Free	Free	Fr	ee	Free	Free		Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	50		-	-	-		150		25
Veh in Median Storage, #	-	0	-		-	0	-		-	0	-
Grade, %	-	0	-		-	0	-		-	0	-
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	0	5	20		23	15	25		2	5	1
Mvmt Flow	10	46	13		10	61	14		60	121	18
Major/Minor	Major1			Majo	or2				Minor1		
Conflicting Flow All	75	0	0		46	0	0		161	160	46
Stage 1	-	-	-		-	-	-		65	65	-
Stage 2	-	-	-		-	-	-		96	95	-
Critical Hdwy	4.1	-	-	4.	.33	-	-		7.12	6.55	6.21
Critical Hdwy Stg 1	-	-	-		-	-	-		6.12	5.55	-
Critical Hdwy Stg 2	-	-	-		-	-	-		6.12	5.55	-
Follow-up Hdwy	2.2	-	-	2.4	07	-	-		3.518	4.045	3.309
Pot Cap-1 Maneuver	1537	-	-	14	37	-	-		804	727	1026
Stage 1	-	-	-		-	-	-		946	835	-
Stage 2	-	-	-		-	-	-		911	810	-
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1537	-	-	14	37	-	-		781	717	1026
Mov Cap-2 Maneuver	-	-	-		-	-	-		781	717	-
Stage 1	-	-	-		-	-	-		939	829	-
Stage 2	-	-	-		-	-	-		887	804	-
Approach	EB			V	VB				NB		
Approach											
HCM Control Delay, s HCM LOS	1.1			(0.9				10.5 B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL E	ВТ	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	781	717	1026	1537	-	-	1437	-	-	685	
HCM Lane V/C Ratio	0.077	0.168	0.018	0.006	-	-	0.007	-	-	0.043	
HCM Control Delay (s)	10	11	8.6	7.4	0	-	7.5	0	-	10.5	
HCM Lane LOS	В	В	Α	Α	Α	-	Α	Α	-	В	
HCM 95th %tile Q(veh)	0.2	0.6	0.1	0	-	-	0	-	-	0.1	

Movement	EE			WBL	WBT	NBL	NBR
Vol, veh/h	15			26	159	1	133
Conflicting Peds, #/hr		0 0		0	0	0	0
Sign Control	Fre	ee Free		Free	Free	Stop	Stop
RT Channelized		- None		-	None	-	None
Storage Length				-	-	0	-
Veh in Median Storage, #		0 -		-	0	0	-
Grade, %		0 -		-	0	0	
Peak Hour Factor	Ç	92 92		92	92	92	92
Heavy Vehicles, %		7 0		28	7	0	5
Mvmt Flow	16	54 2		28	173	1	145
Major/Minor	Majo	-1	M	Major2		Minor1	
Conflicting Flow All	iviaju	0 0	IV	166	0	394	165
Stage 1				100	-	394 165	100
Stage 2						229	
Critical Hdwy				4.38		6.4	6.25
Critical Hdwy Stg 1						5.4	0.20
Critical Hdwy Stg 2				-		5.4	-
Follow-up Hdwy				2.452		3.5	3.345
Pot Cap-1 Maneuver				1269		615	3.343 872
						869	0/2
Stage 1				-	-	814	
Stage 2				-	-	814	-
Platoon blocked, %		-		1269	-	/00	072
Mov Cap-1 Maneuver					-	600	872
Mov Cap-2 Maneuver		-		-	-	600	
Stage 1				-	-	869	
Stage 2				-	-	794	
Approach	E	:B		WB		NB	
HCM Control Delay, s		0		1.1		10	
HCM LOS						В	
Minor Lane/Major Mvmt	NBLn1 EE	BT EBR	WBL	WBT			
Capacity (veh/h)	869		1269	WDI			
HCM Lane V/C Ratio	0.168		0.022	-			
	10		7.9	0			
HCM Control Delay (s) HCM Lane LOS	10 B			A			
	0.6		A 0.1	А			
HCM 95th %tile Q(veh)	0.0		U. I	-			

FASTC 2014 Existing PM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 3

FASTC 2014 Existing PM Int 1-10.syn Cardno GS

Synchro 8 Light Report Page 4

Intersection											
Int Delay, s/veh	5										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBR
Vol, veh/h	3	0	1		64	0	56		0	82	7
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop		Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	-		-	-	-		-	-	-
Veh in Median Storage, #	-	0				0			-	0	
Grade, %	-	0	-		-	0	-		-	0	-
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	0	0	0		2	0	3		0	4	0
Mvmt Flow	3	0	1		70	0	61		0	89	8
Major/Minor	Minor2				Minor1				Major1		
Conflicting Flow All	203	177	46		174	173	93		46	0	0
Stage 1	80	80			93	93					
Stage 2	123	97			81	80					
Critical Hdwy	7.1	6.5	6.2		7.12	6.5	6.23		4.1		
Critical Hdwy Stg 1	6.1	5.5	-		6.12	5.5	-		-		
Critical Hdwy Stg 2	6.1	5.5			6.12	5.5					
Follow-up Hdwy	3.5	4	3.3		3.518	4	3.327		2.2	-	
Pot Cap-1 Maneuver	759	720	1029		789	724	961		1575	-	
Stage 1	934	832	-		914	822	-		-	-	
Stage 2	886	819			927	832					
Platoon blocked, %											
Mov Cap-1 Maneuver	704	711	1029		780	715	961		1575		
Mov Cap-2 Maneuver	704	711	-		780	715	-		-		
Stage 1	934	821			914	822					
Stage 2	830	819	-		914	821	-		-	-	-
Approach	EB				WB				NB		
HCM Control Delay, s	9.7				10				0		
HCM LOS	7.7 A				В				U		
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1575	IND I	NDIX	764	855	1385	- 301	JUK -			
HCM Lane V/C Ratio	10/0	-	-	0.006	0.153	0.013	-	-			
HCM Control Delay (s)	0			9.7	10	7.6	0	-			
HCM Control Delay (S) HCM Lane LOS	A			9.7 A	10 B	7.6 A	A	-			
HCM 95th %tile Q(veh)	A	-	-	A 0	Ď	A	A	-			

Existing PM 10/1/2014

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	16	42	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized		-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %		0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	21	14	0
Mvmt Flow	17	46	0
Major/Minor	Major2		
	97	0	0
Conflicting Flow All	97	U	-
Stage 1		-	
Stage 2	4.01	-	-
Critical Hdwy	4.31	-	-
Critical Hdwy Stg 1			-
Critical Hdwy Stg 2 Follow-up Hdwy	2.389		-
Pot Cap-1 Maneuver	1385		-
			-
Stage 1		-	-
Stage 2	-		-
Platoon blocked, %	1385	-	-
Mov Cap-1 Maneuver			-
Mov Cap-2 Maneuver	-		
Stage 1 Stage 2	-		
Stage 2	•	-	-
Approach	SB		
HCM Control Delay, s	2.1		
HCM LOS			
Minor Lano/Major Mumt			
Minor Lane/Major Mvmt			

Int Delay, s/veh	2.3							
in boldy, siven	2.0							
Movement	EBL		EBR		NBL	NBT	SBT	SBI
Vol, veh/h	12		18		39	77	29	7
Conflicting Peds, #/hr	0		0		0	0	0	
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	Non
Storage Length	0		-		-	-		
Veh in Median Storage, #	0		-		-	0	0	
Grade, %	0		-		-	0	0	
Peak Hour Factor	92		92		92	92	92	9
Heavy Vehicles, %	0		6		2	4	15	
Mvmt Flow	13		20		42	84	32	86
Major/Minor	Minor2			N	/lajor1		Major2	
Conflicting Flow All	242		74		117	0		(
Stage 1	74		-		-	-	-	
Stage 2	168		-		-	-		
Critical Hdwy	6.4		6.26		4.12	-	-	
Critical Hdwy Stg 1	5.4		-		-	-		
Critical Hdwy Stg 2	5.4		-		-	-	-	
Follow-up Hdwy	3.5		3.354		2.218	-	-	
Pot Cap-1 Maneuver	751		977		1471	-	-	
Stage 1	954		-		-	-		
Stage 2	867		-		-	-	-	
Platoon blocked, %						-	-	
Mov Cap-1 Maneuver	728		977		1471	-	-	
Mov Cap-2 Maneuver	728		-		-	-	-	
Stage 1	954		-		-	-	-	
Stage 2	841		-		-	-		
Approach	EB				NB		SB	
HCM Control Delay, s	9.4				2.5		0	
HCM LOS	A							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	1471	-	859	-	-			
HCM Lane V/C Ratio	0.029	-	0.038	-	-			
HCM Control Delay (s)	7.5	0	9.4	-	-			
HCM Lane LOS	Α	Α	Α	-	-			
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-			

Int Delay, s/veh	2.4										
in Bolay, a von											
Movement	EBL	EBT	EBR	W	/BL	WBT	WBR		NBL	NBT	NBI
Vol, veh/h	1	28	7		1	74	1		28	1	
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	
Sign Control	Free	Free	Free	Fi	ree	Free	Free		Stop	Stop	Sto
RT Channelized	-	-	None		-	-	None			-	Non
Storage Length	-	-	-		-	-	-		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	9.
Heavy Vehicles, %	27	19	0		0	4	0		4	0	
Mymt Flow	1	30	8		1	80	1		30	1	
Major/Minor	Major1			Majo	or2				Minor1		
Conflicting Flow All	82	0	0		38	0	0		122	120	3
Stage 1	-	-	-		-	-	-		36	36	
Stage 2	-	-	-		-	-	-		86	84	
Critical Hdwy	4.37	-	-		4.1	-	-		7.14	6.5	6.
Critical Hdwy Stg 1	-	-	-		-	-	-		6.14	5.5	
Critical Hdwy Stg 2	-	-	-		-	-	-		6.14	5.5	
Follow-up Hdwy	2.443	-	-		2.2	-	-		3.536	4	3.
Pot Cap-1 Maneuver	1371	-	-	15	585	-	-		848	774	104
Stage 1	-	-	-		-	-	-		974	869	
Stage 2	-	-	-		-	-	-		917	829	
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1371	-	-	15	585	-	-		841	772	104
Mov Cap-2 Maneuver	-	-	-		-	-	-		841	772	
Stage 1	-	-	-		-	-	-		973	868	
Stage 2	-	-	-		-	-	-		910	828	
Approach	EB				WB				NB		
HCM Control Delay, s	0.2				0.1				9.4		
HCM LOS									Α		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT		/BL	WBT	WBR	SBLn1			
Capacity (veh/h)	844	1371	-		585	-	-	891			
HCM Lane V/C Ratio	0.039	0.001	-		001	-	-	0.007			
HCM Control Delay (s)	9.4	7.6	0	-	7.3	0	-	9.1			
HCM Lane LOS	Α	Α	Α		Α	Α		Α			
LICM OF the Office Office (No.	0.1	^	/ \		^			^			

Movement	SBL	SBT	SBR
Vol, veh/h	0	2	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	- -	- -	None
Storage Length	-	-	-
Veh in Median Storage, #		0	
Grade, %		0	
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	6
Mymt Flow	0	2	4
WWW. Tiow			
Major/Minor	Minor2		
Conflicting Flow All	121	123	81
Stage 1	83	83	-
Stage 2	38	40	-
Critical Hdwy	7.1	6.5	6.26
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.354
Pot Cap-1 Maneuver	859	771	968
Stage 1	930	830	-
Stage 2	982	866	-
Platoon blocked, %			
Mov Cap-1 Maneuver	856	769	968
Mov Cap-2 Maneuver	856	769	-
Stage 1	929	829	-
Stage 2	979	865	-
Approach	SB		
HCM Control Delay, s	9.1		
HCM LOS	Α		

HCM 95th %tile Q(veh)

Intersection											
Int Delay, s/veh	1.3										
Movement	EBL	EBT	EBR	V	VBL	WBT	WBR		NBL	NBT	NBF
Vol, veh/h	1	24	3		0	62	0		13	0	(
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	(
Sign Control	Free	Free	Free	F	ree	Free	Free		Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	-		-	-	-		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	27	18	0		0	4	0		1	0	(
Mvmt Flow	1	26	3		0	67	0		14	0	(
Major/Minor	Major1			Ma	ijor2				Minor1		
Conflicting Flow All	67	0	0		29	0	0		98	97	28
Stage 1	-				-		-		30	30	
Stage 2					-		-		68	67	
Critical Hdwy	4.37				4.1				7.11	6.5	6.2
Critical Hdwy Stg 1	-				-	-			6.11	5.5	
Critical Hdwy Stg 2							-		6.11	5.5	
Follow-up Hdwy	2.443	-	-		2.2	-	-		3.509	4	3.3
Pot Cap-1 Maneuver	1390	-	-	1	597	-	-		886	797	1053
Stage 1	-	-	-		-	-	-		989	874	
Stage 2	-	-	-			-	-		945	843	
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1390	-		1	597	-	-		884	796	1053
Mov Cap-2 Maneuver	-	-	-		-	-	-		884	796	
Stage 1	-	-	-		-	-	-		988	873	
Stage 2	-	-	-		-	-	-		944	843	
Approach	EB				WB				NB		
HCM Control Delay, s	0.3				0				9.1		
HCM LOS	0.0				ŭ				A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR V	VBL	WBT	WBR	SBLn1			
Capacity (veh/h)	884	1390	LDI		597	WDI	WDIX	985			
HCM Lane V/C Ratio	0.016	0.001	-	- 1	-			0.001			
HCM Control Delay (s)	9.1	7.6	0		0			8.7			
HCM Lara LOS	9.1	7.0	0		0		-	0.7			

SBR 1 0 Stop None 92 6 1
1 0 Stop None - - - 92 6 1
1 0 Stop None - - 92 6 1
1 0 Stop None - - 92 6 1
0 Stop None - - - 92 6 1
Stop None - - - 92 6 1
None 92 6 1
None 92 6 1
- 92 6 1
92 6 1
92 6 1
67
67
67
-
-
-
-
-
/ 0/
6.26
-
-
3.354
985
-
-
985
-
-
-

HCM Lane LOS HCM 95th %tile Q(veh) Intersection Int Delay, s/veh

Movement

Vol, veh/h

Grade, %

Mvmt Flow

Sign Control

RT Channelized

Storage Length Veh in Median Storage, #

Peak Hour Factor

Heavy Vehicles, %

Conflicting Flow All

Conflicting Peds, #/hr

Existing PM 10/1/2014

0

0

92

0

0

Free Free

0

None

92

0

0

92

0

Free

2.4

EBL

0

0

Stop

92

0 27

0

EBT

Stop

0

0

0

92

EBR

0

92

0

Stop

None

0

0

Stop

92

6

0

0

Stop

92

0

0

0

Stop

None

92

6

0

HCM 2010 TWSC 8: Dearing Ave & Military Rd/FASTC Main Campus

Int Delay, s/veh			
	001	ODT	000
Movement	SBL	SBT	SBR
Vol, veh/h	0	1	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	27	0	0
Mvmt Flow	0	1	0
Major/Minor	Major2		
Conflicting Flow All	0	0	0
Stage 1	-	-	-
Stage 2	4.37	-	-
Critical Hdwy		-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	2 442	-	-
Follow-up Hdwy	2.443	-	-
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Approach	SB		
HCM Control Delay, s	0		
HCM LOS			

Stage 1	1	1	-		2	2	-		-	-	
Stage 2	2	2	-		2	1	-		-	-	
Critical Hdwy	7.1	6.77	6.2		7.1	6.56	6.26		4.1	-	
Critical Hdwy Stg 1	6.1	5.77	-		6.1	5.56	-		-	-	
Critical Hdwy Stg 2	6.1	5.77	-		6.1	5.56	-		-	-	
Follow-up Hdwy	3.5	4.243	3.3		3.5	4.054	3.354		2.2	-	
Pot Cap-1 Maneuver	1024	845	1090		1022	885	-		1635	-	
Stage 1	1027	848	-		1026	886	-		-	-	
Stage 2	1026	847	-		1026	887	-		-	-	
Platoon blocked, %										-	
Mov Cap-1 Maneuver	-	844	1090		1020	884	-		1635	-	
Mov Cap-2 Maneuver	-	844	-		1020	884	-		-	-	
Stage 1	1026	848	-		1025	885	-		-	-	
Stage 2	1025	846	-		1025	887	-		-	-	
Approach	EB				WB				NB		
HCM Control Delay, s					0				7.2		
HCM LOS	-				Α						
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1 W	/BLn1	SBL	SBT	SBR			
Capacity (veh/h)	1635	-	-	-	-	-	-	-			
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-			
HCM Control Delay (s)	7.2	0	-	-	0	0	-	-			
HCM Lane LOS	Α	Α			Α	Α	_				
HOW EURO EOO	A					,,					

Minor Lane/Major Mvmt

Intersection									
Int Delay, s/veh	0.4								
Movement	EBL	EBT				WBT	WBR	SBL	SBR
Vol, veh/h	1	19				82	2	1	3
Conflicting Peds, #/hr	0	0				0	0	0	C
Sign Control	Free	Free				Free	Free	Stop	Stop
RT Channelized	-	None					None		None
Storage Length	-	-				-	-	0	
Veh in Median Storage, #		0				0		0	
Grade, %		0				0	-	0	
Peak Hour Factor	92	92				92	92	92	92
Heavy Vehicles, %	0	18				2	5	23	0
Mvmt Flow	1	21				89	2	1	3
Major/Minor	Major1					Major2		Minor2	
Conflicting Flow All	91	0				-	0	113	90
Stage 1	-	-				-	-	90	
Stage 2	-	-				-	-	23	
Critical Hdwy	4.1	-				-	-	6.63	6.2
Critical Hdwy Stg 1	-	-				-	-	5.63	
Critical Hdwy Stg 2	-	-				-	-	5.63	
Follow-up Hdwy	2.2	-				-	-	3.707	3.3
Pot Cap-1 Maneuver	1517	-				-	-	835	973
Stage 1	-	-				-	-	883	
Stage 2	-	-				-	-	948	
Platoon blocked, %		-				-	-		
Mov Cap-1 Maneuver	1517	-				-	-	834	973
Mov Cap-2 Maneuver	-	-				-	-	834	
Stage 1	-	-				-	-	883	
Stage 2	•	•				-	-	947	
Approach	EB					WB		SB	
HCM Control Delay, s	0.4					0		8.9	
HCM LOS	0.1					Ü		A	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1				
Capacity (veh/h)	1517	-	-	-	934				
HCM Lane V/C Ratio	0.001	-	-	-	0.005				
HCM Control Delay (s)	7.4	0	-	-	8.9				
HCM Lane LOS	А	Α	-	-	Α				
HCM 95th %tile Q(veh)	0	-	-	-	0				

FASTC 2014 Existing PM Int 1-10.syn Cardno GS

Existing PM 10/22/2014 HCM 2010 Signalized Intersection Summary 10: S. Main St & 8th St/W Entrance Rd

	→	•	—	•	•	†	\	ļ	
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	10	15	158	86	4	501	51	414	
v/c Ratio	0.07	0.06	0.53	0.15	0.01	0.77	0.18	0.46	
Control Delay	41.9	0.4	39.5	6.3	17.0	30.8	11.1	14.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.9	0.4	39.5	6.3	17.0	30.8	11.1	14.0	
Queue Length 50th (ft)	5	0	70	0	1	203	11	113	
Queue Length 95th (ft)	24	0	160	34	8	371	32	214	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	240	353	632	628	631	1138	347	1460	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.04	0.25	0.14	0.01	0.44	0.15	0.28	
Intersection Summary									

	•	-	•	•	—	•	•	†	~	\	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्स	7		4	7"	ሻ	4		*	4	
Volume (veh/h)	1	8	14	125	20	79	4	369	92	48	388	6
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	170.1	190.0	190.0	185.5	171.2	190.0	182.7	190.0	166.7	182.8	190.0
Adj Flow Rate, veh/h	1	9	15	136	22	86	4	401	100	51	408	6
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	13	13	0	5	5	11	0	4	4	14	4	4
Cap, veh/h	13	116	122	201	33	258	483	540	135	292	934	14
Arrive On Green	0.08	0.08	0.08	0.13	0.13	0.13	0.38	0.38	0.38	0.05	0.52	0.52
Sat Flow, veh/h	169	1523	1615	1531	248	1455	988	1413	352	1587	1797	26
Grp Volume(v), veh/h	10	0	15	158	0	86	4	0	501	51	0	414
Grp Sat Flow(s), veh/h/ln	1693	0	1615	1779	0	1455	988	0	1765	1587	0	1823
Q Serve(q_s), s	0.4	0.0	0.6	5.6	0.0	3.4	0.2	0.0	16.1	1.2	0.0	9.3
Cycle Q Clear(q_c), s	0.4	0.0	0.6	5.6	0.0	3.4	0.4	0.0	16.1	1.2	0.0	9.3
Prop In Lane	0.10		1.00	0.86		1.00	1.00		0.20	1.00		0.01
Lane Grp Cap(c), veh/h	128	0	122	234	0	258	483	0	675	292	0	947
V/C Ratio(X)	0.08	0.00	0.12	0.68	0.00	0.33	0.01	0.00	0.74	0.17	0.00	0.44
Avail Cap(c_a), veh/h	257	0	245	674	0	619	779	0	1204	460	0	1687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	28.4	27.3	0.0	23.7	12.8	0.0	17.5	12.6	0.0	9.8
Incr Delay (d2), s/veh	0.3	0.0	0.4	3.4	0.0	0.7	0.0	0.0	1.6	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	2.9	0.0	1.4	0.0	0.0	8.1	0.5	0.0	4.7
LnGrp Delay(d),s/veh	28.6	0.0	28.9	30.7	0.0	24.4	12.8	0.0	19.2	12.9	0.0	10.2
LnGrp LOS	C	0.0	C	C	0.0	C	B	0.0	В	В	0.0	В
Approach Vol, veh/h	0	25	0		244			505		D	465	
Approach Delay, s/veh		28.8			28.5			19.1			10.5	
Approach LOS		20.0 C			20.5 C			В			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		14.7	9.0	31.2		11.0		40.3				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (q c+l1), s		7.6	3.2	18.1		2.6		11.3				
Green Ext Time (p_c), s		1.1	0.0	7.1		0.0		7.9				
Intersection Summary												
HCM 2010 Ctrl Delay			17.9									
HCM 2010 LOS			В									

Existing PM 10/22/2014 HCM 2010 Signalized Intersection Summary 11: S. Main St & Church St

Existing PM 10/22/2014

	۶	•	•	†	Į.	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	45	218	222	241	266	55
v/c Ratio	0.14	0.32	0.27	0.16	0.52	0.10
Control Delay	20.6	2.8	3.9	3.1	18.8	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	2.8	3.9	3.1	18.8	6.0
Queue Length 50th (ft)	7	0	0	0	40	0
Queue Length 95th (ft)	40	28	51	55	145	21
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1075	841	928	1726	1460	1422
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.26	0.24	0.14	0.18	0.04
Intersection Summary						

	۶	•	1	†	↓	4	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	*	7	*	^	^	7	
Volume (veh/h)	41	201	204	222	245	51	
Number	7	14	5	2	6	16	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A pbT)	1.00	1.00	1.00			1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	171.2	172.7	179.2	172.7	166.7	190.0	
Adj Flow Rate, veh/h	45	218	222	241	266	55	
Adj No. of Lanes	1	1	1	1	1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	11	10	6	10	14	0	
Cap, veh/h	299	464	508	908	412	399	
Arrive On Green	0.18	0.18	0.13	0.53	0.25	0.25	
Sat Flow, veh/h	1630	1468	1707	1727	1667	1615	
Grp Volume(v), veh/h	45	218	222	241	266	55	
Grp Sat Flow(s),veh/h/ln	1630	1468	1707	1727	1667	1615	
Q Serve(g_s), s	1.0	4.9	3.5	3.2	5.9	1.1	
Cycle Q Clear(g_c), s	1.0	4.9	3.5	3.2	5.9	1.1	
Prop In Lane	1.00	1.00	1.00			1.00	
Lane Grp Cap(c), veh/h	299	464	508	908	412	399	
V/C Ratio(X)	0.15	0.47	0.44	0.27	0.65	0.14	
Avail Cap(c_a), veh/h	988	1085	901	2554	1616	1566	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	14.2	11.3	8.7	5.4	13.9	12.1	
Incr Delay (d2), s/veh	0.3	0.9	0.6	0.1	0.6	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.4	4.3	1.7	1.5	2.7	0.5	
LnGrp Delay(d),s/veh	14.4	12.2	9.3	5.4	14.5	12.2	
LnGrp LOS	В	В	Α	Α	В	В	
Approach Vol, veh/h	263			463	321		
Approach Delay, s/veh	12.6			7.3	14.1		
Approach LOS	В			Α	В		
Timer	1	2	3	4	5	6	7
Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		27.7		13.6	11.5	16.2	
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	
Max Green Setting (Gmax), s		61.0		25.0	15.0	40.0	
Max Q Clear Time (g_c+l1), s		5.2		6.9	5.5	7.9	
Green Ext Time (p_c), s		2.3		1.0	0.4	2.3	
Intersection Summary							
HCM 2010 Ctrl Delay			10.7				
HCM 2010 LOS			В				

Queues 12: N. Main St & Dinwiddie Ave Existing PM 10/22/2014

	•	-	•	←	1	†	-	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	21	30	48	97	8	254	23	283	
v/c Ratio	0.08	0.11	0.16	0.30	0.02	0.45	0.05	0.41	
Control Delay	26.8	22.2	25.5	14.2	17.4	20.0	10.6	14.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.8	22.2	25.5	14.2	17.4	20.0	10.6	14.0	
Queue Length 50th (ft)	5	5	12	7	2	53	4	62	
Queue Length 95th (ft)	29	32	48	51	12	157	17	128	
Internal Link Dist (ft)		598		847		888		606	
Turn Bay Length (ft)	100		150		100		100		
Base Capacity (vph)	546	555	1093	995	776	1191	606	1560	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.05	0.04	0.10	0.01	0.21	0.04	0.18	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 12: N. Main St & Dinwiddie Ave

Existing PM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1		7	1>		7	1>		*	4	
Volume (veh/h)	19	19	8	44	27	63	7	187	47	21	240	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	178.7	190.0	190.0	175.6	190.0	182.7	171.1	190.0
Adj Flow Rate, veh/h	21	21	9	48	29	68	8	203	51	23	261	22
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	174	121	52	213	56	131	459	390	98	383	686	58
Arrive On Green	0.10	0.10	0.10	0.12	0.12	0.12	0.29	0.29	0.29	0.04	0.44	0.44
Sat Flow, veh/h	1810	1263	541	1810	476	1115	1114	1355	341	1740	1556	131
Grp Volume(v), veh/h	21	0	30	48	0	97	8	0	254	23	0	283
Grp Sat Flow(s), veh/h/ln	1810	0	1804	1810	0	1590	1114	0	1696	1740	0	1688
Q Serve(q s), s	0.6	0.0	0.8	1.3	0.0	3.0	0.3	0.0	6.5	0.4	0.0	5.9
Cycle Q Clear(q_c), s	0.6	0.0	0.8	1.3	0.0	3.0	0.3	0.0	6.5	0.4	0.0	5.9
Prop In Lane	1.00		0.30	1.00		0.70	1.00		0.20	1.00		0.08
Lane Grp Cap(c), veh/h	174	0	173	213	0	187	459	0	488	383	0	744
V/C Ratio(X)	0.12	0.00	0.17	0.23	0.00	0.52	0.02	0.00	0.52	0.06	0.00	0.38
Avail Cap(c_a), veh/h	521	0	519	1041	0	915	886	0	1139	817	0	1813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	21.7	20.8	0.0	21.6	13.3	0.0	15.5	11.4	0.0	9.8
Incr Delay (d2), s/veh	0.4	0.0	0.7	0.8	0.0	3.1	0.0	0.0	1.2	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	0.7	0.0	1.5	0.1	0.0	3.2	0.2	0.0	2.8
LnGrp Delay(d),s/veh	22.0	0.0	22.3	21.6	0.0	24.7	13.3	0.0	16.8	11.4	0.0	10.2
LnGrp LOS	С		С	С		С	В		В	В		В
Approach Vol, veh/h		51			145			262			306	
Approach Delay, s/veh		22.2			23.7			16.7			10.3	
Approach LOS		С			С			В			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.0	8.0	21.0		12.1		29.0				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (q_c+l1), s		2.8	2.4	8.5		5.0		7.9				
Green Ext Time (p_c), s		0.1	0.0	5.3		1.0		5.9				
Intersection Summary												
HCM 2010 Ctrl Delay			15.8									
HCM 2010 LOS			B									

HCM 2010 LOS

FASTC 2014 Existing PM Int 11-18.syn Cardno GS Synchro 8 Light Report Page 4

1.1								
Intersection	1.0							
Int Delay, s/veh	1.9							
Movement		EBT	EBR		WBL	WBT	NBL	NBR
Vol, veh/h		52	8		5	42	19	4
Conflicting Peds, #/hr		0	0		0	0	0	0
Sign Control		Free	Free		Free	Free	Stop	Stop
RT Channelized			None			None		None
Storage Length		-	100		247	-	0	-
Veh in Median Storage, #		0	-		-	0	0	-
Grade, %		0	-		-	0	0	-
Peak Hour Factor		92	92		92	92	92	92
Heavy Vehicles, %		2	2		2	2	2	2
Mvmt Flow		57	9		5	46	21	4
Major/Minor		Major1		M	ajor2		Minor1	
Conflicting Flow All		0	0		57	0	114	57
Stage 1		-	-		-	-	57	-
Stage 2		-	-		-	-	57	-
Critical Hdwy		-	-		4.12	-	6.42	6.22
Critical Hdwy Stg 1		-	-		-	-	5.42	-
Critical Hdwy Stg 2		-	-		-	-	5.42	-
Follow-up Hdwy		-	-	2	2.218	-	3.518	3.318
Pot Cap-1 Maneuver		-	-		1547	-	882	1009
Stage 1		-	-		-	-	966	-
Stage 2		-	-		-	-	966	-
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-		1547	-	879	1009
Mov Cap-2 Maneuver		-	-		-	-	879	-
Stage 1		-	-		-	-	966	-
Stage 2		-	-		-	-	963	-
Approach		EB			WB		NB	
HCM Control Delay, s		0			0.8		9.1	
HCM LOS							A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR		WBT			
Capacity (veh/h)	899	-	-	1547	-			
HCM Lane V/C Ratio	0.028	-	-	0.004	-			
HCM Control Delay (s)	9.1	-	-	7.3	-			
HCM Lane LOS	Α	-	-	Α	-			
HCM 95th %tile Q(veh)	0.1	-	-	0	-			

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SB
Vol, veh/h	1	3	2	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Fre
RT Channelized	-	None	-	None	-	Non
Storage Length	0	-	-			
Veh in Median Storage, #	0	-	-	0	0	
Grade, %	0	-	-	0	0	
Peak Hour Factor	92	92	92	92	92	9
Heavy Vehicles, %	2	2	2	2	2	
Mvmt Flow	1	3	2	0	0	
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	4	0	0	0		
Stage 1	0	-	-	-	-	
Stage 2	4	-	-	-	-	
Critical Hdwy	6.42	6.22	4.12	-	-	
Critical Hdwy Stg 1	5.42	-	-	-		
Critical Hdwy Stg 2	5.42	-	-	-	-	
Follow-up Hdwy	3.518	3.318	2.218	-	-	
Pot Cap-1 Maneuver	1018	-	-	-		
Stage 1	-	-	-			
Stage 2	1019	-	-	-	-	
Platoon blocked, %						
Mov Cap-1 Maneuver	1018	-	-	-	-	
Mov Cap-2 Maneuver	1018	-	-		-	
Stage 1	-	-	-	-	-	
Stage 2	1019	-	-	-	-	
Approach	EB		NB		SB	
HCM Control Delay, s	ED		0		0	
HCM LOS			U		0	
110111 200						
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	-					
HCM Lane V/C Ratio	-					
HCM Control Delay (s)	-					
HCM Lane LOS	-					
HCM 95th %tile Q(veh)						

Int Delay, s/veh	4.6						
int Delay, siven	4.0						
Movement	EBL	EBR		NBL	NBT	SBT	SBF
Vol, veh/h	20	C		0	4	3	1
Conflicting Peds, #/hr	0	C		0	0	0	
Sign Control	Stop	Stop		Free	Free	Free	Free
RT Channelized		None			None		None
Storage Length	0				-		
Veh in Median Storage, #	0				0	0	
Grade, %	0			-	0	0	
Peak Hour Factor	92	92		92	92	92	9:
Heavy Vehicles, %	2	2		2	2	2	
Mymt Flow	22	0		0	4	3	1:
WWITELLIOW	22			U	7	<u> </u>	١.
Major/Minor	Minor2		M:	ajor1		Major2	
Conflicting Flow All	13	ç		15	0	- Iviajoi 2	-
Stage 1	9	,		- 13	-		,
	4						
Stage 2	•				-		
Critical Hdwy	6.42	6.22		4.12	-		
Critical Hdwy Stg 1	5.42			-	•		
Critical Hdwy Stg 2	5.42			-	-		
Follow-up Hdwy	3.518	3.318		2.218	-	•	
Pot Cap-1 Maneuver	1006	1073		1603	-	-	
Stage 1	1014			-	-		
Stage 2	1019			-	-	-	
Platoon blocked, %					-		
Mov Cap-1 Maneuver	1006	1073		1603	-	-	
Mov Cap-2 Maneuver	1006			-	-		
Stage 1	1014			-	-	-	
Stage 2	1019			-	-	-	
Approach	EB			NB		SB	
HCM Control Delay, s	8.7			0		0	
HCM LOS	А						
Miner Leve /Meier M. v. 1	NDI	NDT ED! 4	CDT	CDD			
Minor Lane/Major Mvmt	NBL	NBT EBLn1		SBR			
Capacity (veh/h)	1603	- 1006		-			
HCM Lane V/C Ratio	-	- 0.022		-			
HCM Control Delay (s)	0	- 8.7		-			
HCM Lane LOS	А	- A		-			
HCM 95th %tile Q(veh)	0	- 0.1	-	-			

HCM 95th %tile Q(veh)

Minor Lane/Major Mvmt

Intersection											
Int Delay, s/veh	6										
, ,											
Movement	EBL	EBT	EBR	W	/BL	WBT	WBR	NI	3L	NBT	NBF
Vol, veh/h	1	150	15	2	251	97	2		11	7	100
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	(
Sign Control	Free	Free	Free	Fi	ree	Free	Free	St	op	Stop	Stop
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	125	-	50	1	100	-	100		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	2	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	100	13	0		8	25	0		18	0	7
Mvmt Flow	1	163	16	2	273	105	2		12	8	109
Major/Minor	Major1			Majo	or2			Mino	r1		
Conflicting Flow All	105	0	0	1	163	0	0	7	78	816	82
Stage 1	-	-	-		-	-	-	1	65	165	
Stage 2	-	-	-		-	-	-	6	13	651	
Critical Hdwy	6.1	-	-	4	.26	-	-	7.	86	6.5	7.04
Critical Hdwy Stg 1	-	-	-		-	-	-	6.		5.5	
Critical Hdwy Stg 2	-	-	-		-	-	-	6.		5.5	
Follow-up Hdwy	3.2	-	-		.28	-	-		68	4	3.37
Pot Cap-1 Maneuver	986	-	-	13	370	-	-		59	314	945
Stage 1	-	-	-		-	-	-		76	766	
Stage 2	-	-	-		-	-	-	4	09	468	
Platoon blocked, %		-	-			-	-	_			
Mov Cap-1 Maneuver	986	-		13	370	-	-		02	251	945
Mov Cap-2 Maneuver	-	-	-		-	-	-		80	350	
Stage 1	-	-	-		-	-	-		75 98	765	
Stage 2	-	-	-		-	-	-	2	98	375	
A	ED.			,	ND				ID		
Approach	EB				NB				IB 1		
HCM Control Delay, s HCM LOS	0.1				5.9			- 11	.1 B		
HCM LOS									В		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR W	/BL	WBT	WBR	SBLn1			
Capacity (veh/h)	715	986	LDI -		370	WDI -	WDIX	404			
HCM Lane V/C Ratio	0.179	0.001	-		199		-	0.116			
HCM Control Delay (s)	11.1	8.7			8.3			15.1			
HCM Lane LOS	В.	Α.7			Α.			C			
HOMOGRAD (ASID OVER)	0.7	^			^ 7			0.4			

Intersection				
Int Delay, s/veh				
int Beldy, siven				
	001	ODT	000	
Movement	SBL	SBT	SBR	
Vol, veh/h	5	27	11	
Conflicting Peds, #/hr	0	0	0	
Sign Control	Stop	Stop	Stop	
RT Channelized	-	-	None	
Storage Length	-	-	-	
Veh in Median Storage, #	-	2	-	
Grade, %	-	0	-	
Peak Hour Factor	92	92	92	
Heavy Vehicles, %	0	4	9	
Mvmt Flow	5	29	12	
Major/Minor	Minor2			
Conflicting Flow All	739	816	53	
Stage 1	651	651	- 55	
	88	165		
Stage 2	7.5	6.58	7.08	
Critical Lidux Str. 1	6.5	5.58		
Critical Hdwy Stg 1	6.5	5.58	-	
Critical Hdwy Stg 2	3.5	4.04	3.39	
Follow-up Hdwy				
Pot Cap-1 Maneuver	309	306	981	
Stage 1	429	458	-	
Stage 2	916	756	-	
Platoon blocked, %	00.5	0.15		
Mov Cap-1 Maneuver	228	245	981	
Mov Cap-2 Maneuver	367	331	-	
Stage 1	429	367	-	
Stage 2	802	755	-	
Approach	SB			
HCM Control Delay, s	15.1			
HCM LOS	C			
	J			

FASTC 2018 Base AM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 1

FASTC 2018 Base AM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 2

Intersection Int Delay, s/veh	4.4							
ini Delay, Sven	4.4							
Movement		EBT	EBR		WBL	WBT	NBL	NB
Vol, veh/h		83	2		188	104	1	3
Conflicting Peds, #/hr		0	0		0	0	0	
Sign Control		Free	Free		Free	Free	Stop	Sto
RT Channelized		-	None		-	None	-	Non
Storage Length		-	-		-	-	0	
Veh in Median Storage, #		0	-		-	0	0	
Grade, %		0	-		-	0	0	
Peak Hour Factor		92	92		92	92	92	9
Heavy Vehicles, %		5	0		2	15	0	2
Mvmt Flow		90	2		204	113	1	3
Major/Minor	N	lajor1			Major2		Minor1	
Conflicting Flow All		0	0		92	0	613	9
Stage 1		-	-		-	-	91	
Stage 2		-	-		-	-	522	
Critical Hdwy		-	-		4.12	-	6.4	6.4
Critical Hdwy Stg 1		-	-		-	-	5.4	
Critical Hdwy Stg 2		-	-		-	-	5.4	
Follow-up Hdwy		-	-		2.218	-	3.5	3.48
Pot Cap-1 Maneuver		-	-		1503	-	459	91
Stage 1		-	-		-	-	938	
Stage 2		-	-		-	-	599	
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-		1503	-	392	91
Mov Cap-2 Maneuver		-	-		-	-	392	
Stage 1		-	-		-	-	938	
Stage 2		-	-		-	-	512	
Approach		EB			WB		NB	
HCM Control Delay, s HCM LOS		0			5		9.3 A	
HCM LOS							А	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT			
Capacity (veh/h)	885	LDI	LDIN -	1503	WD1			
HCM Lane V/C Ratio	0.045		-	0.136	-			
HCM Control Delay (s)	9.3			7.8	0			
i icivi contitoi belay (3)								
HCM Lane LOS	A			Α	Α			

Intersection											
Int Delay, s/veh	6										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBF
Vol, veh/h	9	41	130		17	19	8		7	19	1
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	(
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	50		-	-	-		150	-	25
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		95	95	95		92	92	92
Heavy Vehicles, %	0	18	0		0	11	63		0	12	(
Mvmt Flow	10	45	141		18	20	8		8	21	1
Major/Minor	Mojor1				Major2				Minor1		
Major/Minor	Major1 28	0	0		Major2 45	0	0		Minor1 221	128	45
Conflicting Flow All Stage 1	20	0	0		45	0	-		64	64	40
	-					-			157	64	
Stage 2		-	-		- 4.1	-	-				6.2
Critical Hdwy Critical Hdwy Stg 1	4.1	-			4.1	-	-		7.1 6.1	6.62 5.62	0.2
Critical Hdwy Stg 2	-	-	-			-	-		6.1	5.62	
Follow-up Hdwy	2.2	-	-		2.2	-			3.5	4.108	3.3
Pot Cap-1 Maneuver	1599				1576		-		739	744	1031
Stage 1	1399	-			1370				952	822	103
Stage 2		-	-		-	-	-		952 850	822	
Platoon blocked, %	-	-	-		-	-			630	622	
Mov Cap-1 Maneuver	1599				1576		-		585	730	1031
Mov Cap-1 Maneuver	1099		-		1370				585	730	1031
Stage 1	-		-		-	-	-		945	816	
Stage 2		-				-	-		648	812	
Staye 2		•	•		•	•	•		040	012	
Approach	EB				WB				NB		
HCM Control Delay, s	0.4				2.8				10.3		
HCM LOS	0.1				2.0				В		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	585	730	1031	1599	-	-	1576	-	-	760	
HCM Lane V/C Ratio	0.013	0.028	0.001	0.006	-	-	0.011	-	-	0.27	
HCM Control Delay (s)	11.2	10.1	8.5	7.3	0	-	7.3	0	-	11.5	
HCM Lane LOS	В	В	Α	Α	Α	-	Α	Α	-	В	
HCM 95th %tile Q(veh)	0	0.1	0	0	-	-	0	-	-	1.1	

Intersection			
Int Delay, s/veh			
7			
Movement	SBL	SBT	SBR
Vol. veh/h	11	173	5 5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-		None
Storage Length	-	-	-
Veh in Median Storage, #		0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	18	1	0
Mvmt Flow	12	188	5
Major/Minor	Minor2		
Conflicting Flow All	134	124	24
Stage 1	60	60	
Stage 2	74	64	-
Critical Hdwy	7.28	6.51	6.2
Critical Hdwy Stg 1	6.28	5.51	0.2
	6.28	5.51	
Critical Hdwy Stg 2			3.3
Follow-up Hdwy	3.662	4.009	
Pot Cap-1 Maneuver	802	768	1058
Stage 1	913	847	-
Stage 2	897	844	-
Platoon blocked, %			
Mov Cap-1 Maneuver	773	753	1058
Mov Cap-2 Maneuver	773	753	-
Stage 1	907	837	-
Stage 2	867	838	-
-			
	SB		
Approach	JD.		
Approach HCM Control Delay s			
HCM Control Delay, s	11.5		
HCM Control Delay, s	11.5		

Int Dolov, olyob	2.2										
Int Delay, s/veh	2.2										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBF
Vol, veh/h	0	0	0		10	0	6		0	93	35
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	C
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop		Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	-		-	-	-		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	0	0	0		0	0	33		0	2	6
Mvmt Flow	0	0	0		11	0	7		0	101	38
Major/Minor	Minor2				Minor1			M	ajor1		
Conflicting Flow All	380	396	113		377	377	120		113	0	C
Stage 1	257	257	-		120	120	-		-	-	
Stage 2	123	139	-		257	257	-		-	-	
Critical Hdwy	7.1	6.5	6.2		7.1	6.5	6.53		4.1	-	
Critical Hdwy Stg 1	6.1	5.5	-		6.1	5.5	-		-	-	
Critical Hdwy Stg 2	6.1	5.5	-		6.1	5.5	-		-	-	
Follow-up Hdwy	3.5	4	3.3		3.5	4	3.597		2.2	-	
Pot Cap-1 Maneuver	581	544	945		584	558	854		1489	-	
Stage 1	752	699	-		889	800	-		-	-	
Stage 2	886	785	-		752	699	-		-	-	
Platoon blocked, %										-	
Mov Cap-1 Maneuver	553	515	945		560	528	854		1489	-	
Mov Cap-2 Maneuver	553	515	-		560	528	-		-	-	
Stage 1	752	662	-		889	800	-		-	-	
Stage 2	879	785	-		712	662	-		-	-	
Approach	EB				WB				NB		
HCM Control Delay, s	0				10.8				0		
HCM LOS	А				В						
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1489	- INDI	NDIX	LDLIII	643	1445	- 301	- JDIK			
HCM Lane V/C Ratio	1409	-			0.027	0.05					
	0			- 0	10.8	7.6	0				
HCM Control Delay (s)		-	-				A	-			
HCM Lane LOS	A			Α	В	Α					

Minor Lane/Major Mvmt

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	66	104	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-		None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	0
Mymt Flow	72	113	0
			_
Major/Minor	Major2		
Conflicting Flow All	139	0	0
Stage 1			-
Stage 2	-		
Critical Hdwy	4.12		
Critical Hdwy Stg 1	1.12	-	
Critical Hdwy Stg 2			
Follow-up Hdwy	2.218		-
Pot Cap-1 Maneuver	1445	-	-
Stage 1	-	-	-
Stage 2			-
Platoon blocked. %	-		
	1445	-	
Mov Cap-1 Maneuver	1445		-
Mov Cap-2 Maneuver		-	-
Stage 1	-	-	-
Stage 2	-	-	-
Approach	SB		
HCM Control Delay, s	3		
HCM LOS			

Intersection Int Delay, s/veh	5.3							
пп реау, зучен	5.5							
Movement	EBL		EBR		NBL	NBT	SBT	SBR
Vol, veh/h	103		46		5	24	104	10
Conflicting Peds, #/hr	0		0		0	0	0	0
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	
Veh in Median Storage, #	0		-		-	0	0	-
Grade, %	0		-		-	0	0	-
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	2		2		0	9	2	0
Mvmt Flow	112		50		5	26	113	11
Major/Minor	Minor2			N	Najor1		Major2	
Conflicting Flow All	155		118		124	0		0
Stage 1	118		-		-	-	-	
Stage 2	37		-		-	-		-
Critical Hdwy	6.42		6.22		4.1	-	-	-
Critical Hdwy Stg 1	5.42		-		-	-		
Critical Hdwy Stg 2	5.42		-		-	-	-	-
Follow-up Hdwy	3.518		3.318		2.2	-		-
Pot Cap-1 Maneuver	836		934		1475	-	-	
Stage 1	907		-		-	-		-
Stage 2	985		-		-	-	-	
Platoon blocked, %						-	-	-
Mov Cap-1 Maneuver	833		934		1475	-	-	-
Mov Cap-2 Maneuver	833		-		-	-	-	-
Stage 1	907		-		-	-	-	
Stage 2	982		-		-	-	-	-
Approach	EB				NB		SB	
HCM Control Delay, s	10.1				1.3		0	
HCM LOS	В							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	1475	-	862 0.188	-	-			
HCM Cantral Dalay (a)	0.004	-		-	-			
HCM Control Delay (s) HCM Lane LOS	7.5 A	0 A	10.1 B	-				
			R					

FASTC 2018 Base AM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 7

FASTC 2018 Base AM Int 1-10.syn Cardno GS

HCM Lane LOS HCM 95th %tile Q(veh)

Int Delay, s/veh	1.3								
,									
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBF
Vol, veh/h	1	102	21	1	8	0	11	0	(
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	
Grade, %	-	0	-	-	0	-	-	0	
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	10	0	0	0	18	0	(
Mvmt Flow	1	111	23	1	9	0	12	0	(
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	9	0	0	134	0	0	139	135	122
Stage 1		-	-	-	-	-	124	124	
Stage 2		-	-	-	-	-	15	11	
Critical Hdwy	4.1	-	-	4.1		-	7.28	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.28	5.5	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.28	5.5	
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.662	4	3.3
Pot Cap-1 Maneuver	1624	-	-	1463	-	-	796	760	935
Stage 1	-	-	-	-	-	-	843	797	
Stage 2	-	-	-	-	-	-	965	890	
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1624	-	-	1463	-	-	789	758	935
Mov Cap-2 Maneuver	-	-	-	-	-	-	789	758	
Stage 1	-	-	-	-	-	-	842	796	
Stage 2	-	-	-	-	-	-	957	889	
Approach	EB			WB			NB		
HCM Control Delay, s	0.1			0.8			9.6		
HCM LOS							A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	789	1624	-	- 1463	-	-	949		
HCM Lane V/C Ratio	0.015	0.001	-	- 0.001	-	-	0.009		
HCM Control Delay (s)	9.6	7.2	0	- 7.5	0	-	8.8		
HCM Land LOS	Λ	٨	Λ	٨	۸		٨		

Intersection			
Int Delay, s/veh			
Movement	SBI	SBT	SBR
Vol, veh/h	1	1	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	
RT Channelized	310p	210b	Stop None
Storage Length			
		- 0	
Veh in Median Storage, # Grade, %	-	0	
Peak Hour Factor	92	92	92
Heavy Vehicles, %	100	0	0 7
Mvmt Flow	1	1	/
Major/Minor	Minor2		
Conflicting Flow All	135	147	9
Stage 1	11	11	-
Stage 2	124	136	-
Critical Hdwy	8.1	6.5	6.2
Critical Hdwy Stg 1	7.1	5.5	-
Critical Hdwy Stg 2	7.1	5.5	-
Follow-up Hdwy	4.4	4	3.3
Pot Cap-1 Maneuver	655	748	1079
Stage 1	806	890	-
Stage 2	690	788	
Platoon blocked, %	0,0	700	
Mov Cap-1 Maneuver	654	747	1079
Mov Cap-2 Maneuver	654	747	-
Stage 1	805	889	
Stage 2	689	787	
Olago 2	007	,,,	
Approach	SB		
HCM Control Delay, s	8.8		
HCM LOS	Α		

Minor Lane/Major Mvmt

0.5

EBL

0

Free

92

0

Major1

4.1

2.2

EBT

92

0

0

92

0

0

100

Free

EBR

10

0

Free

None

92

10

11

0

0

Free

92

0

0

Major2

4.1

2.2

Intersection Int Delay, s/veh

Movement

Vol, veh/h

Grade, %

Mvmt Flow

Major/Minor

Sign Control

RT Channelized

Storage Length Veh in Median Storage, #

Peak Hour Factor

Heavy Vehicles, %

Conflicting Flow All

Stage 1

Stage 2 Critical Hdwy

Critical Hdwy Stg 1 Critical Hdwy Stg 2 Follow-up Hdwy

Conflicting Peds, #/hr

0

0

0

92

0

0

112 105

108

6.5

5.5

5.5

Stop Stop

0

None

92

0

0

6.2

3.3

955

955

0

92

18

4

Minor1

113

108

7.28

6.28

6.28

3.662

Stop

0

0

Free

None

92

0

0

0

0

Free

92

0

0

AM HCM 2010 TWSC 014 7: Armistead Ave & Military Rd

Intersection Int Delay, s/veh			
in Doidy, Stroll			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	0
Mvmt Flow	0	0	1
Major/Minor	Minor2		
Conflicting Flow All	112	117	4
Stage 1	4	4	-
Stage 2	108	113	-
Critical Hdwy	7.1	6.5	6.2
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.3
Pot Cap-1 Maneuver	870	777	1085
Stage 1	1024	897	-
Stage 2	902	806	-
Platoon blocked, %			
Mov Cap-1 Maneuver	869	776	1085
Mov Cap-2 Maneuver	869	776	-
Stage 1	1023	897	-
Stage 2	901	805	-
Approach	SB		
Approacii			
HCM Control Delay, s	8.3		

Pot Cap-1 Maneuver	1631	-	-		1492	-	-		828	782
Stage 1	-	-	-		-	-	-		860	810
Stage 2	-	-	-		-	-	-		977	897
Platoon blocked, %		-	-			-	-			
Mov Cap-1 Maneuver	1631	-	-		1492	-	-		827	781
Mov Cap-2 Maneuver	-	-	-		-	-	-		827	781
Stage 1	-	-	-		-	-	-		859	809
Stage 2	-	-	-		-	-	-		976	897
Approach	EB				WB				NB	
HCM Control Delay, s	0.1				0				9.4	
HCM LOS									Α	
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Minor Lane/Major Mvmt Capacity (veh/h)	NBLn1 827	EBL 1631	EBT -	EBR -	WBL 1492	WBT -	WBR	SBLn1 1085		
			EBT - -							
Capacity (veh/h)	827	1631	-	-	1492	-	-	1085		
Capacity (veh/h) HCM Lane V/C Ratio	827 0.005	1631 0.001		-	1492 -	-	-	1085 0.001		

Intersection											
Int Delay, s/veh	6.1										
Movement	FBI	FBT	EBR		WBI	WBT	WBR		NBL	NBT	NBI
Vol, veh/h	0	0	4		0	0	0		3	0	
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop		Free	Free	Fre
RT Channelized	-	-	None		-	-	None		-	-	Non
Storage Length	-		-				-		-		
Veh in Median Storage, #	-	0	-			0	-			0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	9.
Heavy Vehicles, %	0	0	0		0	0	0		0	0	
Mvmt Flow	0	0	4		0	0	0		3	0	
Major/Minor	Minor2				Minor1			N	lajor1		
Conflicting Flow All	8	9	1		10	8	1		1	0	(
Stage 1	1	1	-		7	7	-		-	-	
Stage 2	7	8	-		3	1	-		-	-	
Critical Hdwy	7.1	6.5	6.2		7.1	6.5	6.2		4.1	-	
Critical Hdwy Stg 1	6.1	5.5	-		6.1	5.5	-		-	-	
Critical Hdwy Stg 2	6.1	5.5	-		6.1	5.5	-		-	-	
Follow-up Hdwy	3.5	4	3.3		3.5	4	3.3		2.2	-	
Pot Cap-1 Maneuver	1016	890	1090		1013	891	1090		1635	-	
Stage 1	1027	899	-		1020	894	-		-	-	
Stage 2	1020	893	-		1025	899	-		-	-	
Platoon blocked, %										-	
Mov Cap-1 Maneuver	1014	888	1090		1007	889	1090		1635	-	
Mov Cap-2 Maneuver	1014	888	-		1007	889	-		-	-	
Stage 1	1025	899	-		1018	892	-		-	-	
Stage 2	1018	891	-		1021	899	-		-	-	
Approach	EB				WB				NB		
HCM Control Delay, s	8.3				0				5.4		
HCM LOS	А				Α						
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1635	-	- NDIC	1090	-	1635	- 351	- JDIK			
HCM Lane V/C Ratio	0.002		- 1	0.004	-	1033					
HCM Control Delay (s)	7.2	0		8.3	0	0					
HCM Lane LOS	7.2 A	A	- 1	Α.5	A	A					
HCM 95th %tile Q(veh)	0	Α		0		0					

Intersection				
Int Delay, s/veh				
, i				
Movement	SBL	SBT	SBR	
Vol, veh/h	0	1	0	
Conflicting Peds, #/hr	0	0	0	
Sign Control	Free	Free	Free	
RT Channelized	-	-	None	
Storage Length	-	-	-	
Veh in Median Storage, #	-	0	-	
Grade, %		0	-	
Peak Hour Factor	92	92	92	
Heavy Vehicles, %	0	0	0	
Mvmt Flow	0	1	0	
Major/Minor	Major2			
Conflicting Flow All	1	0	0	
Stage 1	-	-	-	
Stage 2		-		
Critical Hdwy	4.1	-	-	
Critical Hdwy Stg 1		-	-	
Critical Hdwy Stg 2	-	-	-	
Follow-up Hdwy	2.2	-	-	
Pot Cap-1 Maneuver	1635	-	-	
Stage 1	-	-	-	
Stage 2	-	-	-	
Platoon blocked, %	1425	-	-	
Mov Cap-1 Maneuver Mov Cap-2 Maneuver	1635		-	
Stage 1				
Stage 2			-	
Stage 2				
	0.5			
Approach	SB			
HCM Control Delay, s	0			
HCM LOS				
Minor Lane/Major Mvmt				

FASTC 2018 Base AM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 13

FASTC 2018 Base AM Int 1-10.syn Cardno GS

0.7								
0.7								
EBL	EBT				WBT	WBR	SBL	SBF
3	60				16	5	2	- 2
-						-	_	(
								Stop
-					-		-	None
-	-						0	
	0				0		0	
-	0				0		0	
92						92	92	92
								(
								2
J	00							-
Major1					Major2		Minor2	
23	0				-	0	92	20
-	-						20	
-	-				-	-	72	
4.77	-						6.4	6.2
-	-				-	-	5.4	
-	-						5.4	
2.803	-				-		3.5	3.3
1257	-						913	1064
-	-				-	-	1008	
-	-						956	
	-				-	-		
1257	-						911	1064
-	-				-	-	911	
-	-						1008	
-	-				-	-	954	
EB					WB		SB	
0.4					0		8.7	
							А	
EBL	EBT	WBT						
		-	-					
		-	-					
A	Α	-	-	A				
	EBL 3 0 Free 92 67 3 Major1 23 2.803 1257 1257	EBL EBT 3 60 0 0 0 Free Free - None - 0 0 92 92 67 2 3 65 65 65 65 65 65 65	BBL BBT	BBL BBT	BBL BBT	EBL EBT WBT 3 60 16 0 0 0 Free Free - 0 0 - 0 0 - 0 0 92 92 92 67 2 20 3 65 17 Major1 Major2 23 0 - - - - 4.77 - - - - - 2.803 - - 2.803 - - - - - 2.803 - - - - - - - - - - - - - - 2.803 - - - - - - - - - -	BBL EBT WBT WBR SBLnt	EBL EBT WBT WBR SBL 3 60 16 5 2 0 0 0 0 0 Free Free Free Free Stop - None - None - - 0 0 - 0 - 0 0 - 0 - 0 0 - 0 92 92 92 92 92 67 2 20 0 0 0 3 65 17 5 2 Major1 Major2 Minor2 23 0 - 0 92 - - - 20 - - - 20 - - - 20 - - - 72 4.77 - - 6.4 -

FASTC 2018 Base AM Int 1-10.syn Cardno GS

	→	•	←	•	1	†	-	Ţ	
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	9	2	16	29	3	324	83	155	
v/c Ratio	0.05	0.01	0.08	0.05	0.01	0.61	0.19	0.20	
Control Delay	27.8	0.0	27.8	0.2	15.7	22.9	9.0	9.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.8	0.0	27.8	0.2	15.7	22.9	9.0	9.1	
Queue Length 50th (ft)	3	0	5	0	1	92	14	28	
Queue Length 95th (ft)	16	0	23	0	6	177	34	59	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	332	402	798	613	986	1342	497	1575	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.00	0.02	0.05	0.00	0.24	0.17	0.10	
Intersection Summary									

	•	-	•	•	←	•	1	†	/	-	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7		4	7	N.	4î		7	4	
Volume (veh/h)	1	7	2	14	1	27	3	198	100	76	142	1
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	190.0	169.6	190.0	178.7	190.0	184.5	162.5	190.0
Adj Flow Rate, veh/h	1	8	2	15	1	29	3	215	109	83	154	1
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	12	0	7	7	3	17	17
Cap, veh/h	20	160	154	162	11	234	495	320	162	375	753	5
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.29	0.29	0.29	0.07	0.47	0.47
Sat Flow, veh/h	210	1680	1615	1701	113	1442	1251	1119	567	1757	1613	10
Grp Volume(v), veh/h	9	0	2	16	0	29	3	0	324	83	0	155
Grp Sat Flow(s),veh/h/ln	1890	0	1615	1815	0	1442	1251	0	1687	1757	0	1624
Q Serve(g_s), s	0.2	0.0	0.1	0.4	0.0	0.9	0.1	0.0	8.9	1.6	0.0	3.0
Cycle Q Clear(g_c), s	0.2	0.0	0.1	0.4	0.0	0.9	0.1	0.0	8.9	1.6	0.0	3.0
Prop In Lane	0.11		1.00	0.94		1.00	1.00		0.34	1.00		0.01
Lane Grp Cap(c), veh/h	180	0	154	173	0	234	495	0	482	375	0	758
V/C Ratio(X)	0.05	0.00	0.01	0.09	0.00	0.12	0.01	0.00	0.67	0.22	0.00	0.20
Avail Cap(c_a), veh/h	360	0	308	864	0	783	1210	0	1446	592	0	1886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	21.5	21.7	0.0	18.8	13.4	0.0	16.6	11.5	0.0	8.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.2	0.0	0.0	1.6	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.2	0.0	0.4	0.0	0.0	4.4	0.8	0.0	1.3
LnGrp Delay(d),s/veh	21.7	0.0	21.6	21.9	0.0	19.0	13.4	0.0	18.2	11.8	0.0	8.4
LnGrp LOS	С		С	С		В	В		В	В		A
Approach Vol, veh/h		11			45			327			238	
Approach Delay, s/veh		21.7			20.1			18.2			9.6	
Approach LOS		С			С			В			Α	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.0	9.5	21.0		11.0		30.5				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (g_c+l1), s		2.9	3.6	10.9		2.2		5.0				
Green Ext Time (p_c), s		0.1	0.1	3.5		0.0		3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			15.1									
LICM 2010 LOS			D									

HCM 2010 LOS

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	10	95	95	133	128	22
v/c Ratio	0.03	0.20	0.12	0.08	0.17	0.03
Control Delay	12.9	3.1	2.6	2.0	11.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	3.1	2.6	2.0	11.0	6.4
Queue Length 50th (ft)	1	0	0	0	12	0
Queue Length 95th (ft)	12	15	22	29	63	13
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1295	830	1042	1727	1630	1580
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	0.09	0.08	0.08	0.01
Intersection Summary						

HCM 2010 Signalized Intersection Summary 11: S. Main St & Church St

Base AM 10/22/2014

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ň	7	*	†	†	7"
Volume (veh/h)	9	87	87	122	118	20
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	171.2	172.7	179.2	172.7	166.7	190.0
Adj Flow Rate, veh/h	10	95	95	133	128	22
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	10	6	10	14	0.72
Cap, veh/h	210	316	594	903	436	422
Arrive On Green	0.13	0.13	0.09	0.52	0.26	0.26
Sat Flow, veh/h	1630	1468	1707	1727	1667	1615
Grp Volume(v), veh/h	1030	95	95	133	128	22
	1630	1468	1707	1727	1667	1615
Grp Sat Flow(s), veh/h/ln						
Q Serve(g_s), s	0.2	1.9	1.2	1.4	2.1	0.4
Cycle Q Clear(g_c), s	0.2	1.9	1.2	1.4	2.1	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	210	316	594	903	436	422
V/C Ratio(X)	0.05	0.30	0.16	0.15	0.29	0.05
Avail Cap(c_a), veh/h	1184	1194	1190	3061	1937	1877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	11.3	6.7	4.3	10.2	9.5
Incr Delay (d2), s/veh	0.1	0.6	0.1	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.7	0.5	0.6	1.0	0.2
LnGrp Delay(d),s/veh	13.3	12.0	6.8	4.3	10.3	9.5
LnGrp LOS	В	В	Α	Α	В	Α
Approach Vol. veh/h	105			228	150	
Approach Delay, s/veh	12.1			5.3	10.2	
Approach LOS	В			Α.	В	
- 11						
Timer	1	2	3	4	5	6
Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		24.0		10.4	9.0	15.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		61.0		25.0	15.0	40.0
Max Q Clear Time (q_c+l1), s		3.4		3.9	3.2	4.1
Green Ext Time (p_c), s		1.1		0.4	0.2	1.1
Intersection Summary						
HCM 2010 Ctrl Delay			8.3			
HCM 2010 LOS			Α			

FASTC 2018 Base AM Int 11-18.syn Cardno GS Synchro 8 Light Report Page 1

Synchro 8 Light Report Page 2 FASTC 2018 Base AM Int 11-18.syn Cardno GS

Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn Storage Cap Reductn Reduced v/c Ratio

Intersection Summary

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Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	8	19	20	31	143	103	142
v/c Ratio	0.02	0.05	0.05	0.08	0.31	0.22	0.19
Control Delay	26.4	26.1	25.1	13.1	23.7	13.6	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	26.1	25.1	13.1	23.7	13.6	13.0
Queue Length 50th (ft)	3	7	7	2	48	27	37
Queue Length 95th (ft)	15	25	25	23	100	56	72
Internal Link Dist (ft)		598		847	888		606
Turn Bay Length (ft)	100		150			100	
Base Capacity (vph)	475	497	950	825	1040	611	1469
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ሻ	1≽		ሻ	1≽		75	1≽		٦	1	
Volume (veh/h)	7	17	1	18	5	24	0	98	33	95	120	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	(
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	176.7	190.0	190.0	175.1	190.0	182.7	171.2	190.0
Adj Flow Rate, veh/h	8	18	1	20	5	26	0	107	36	103	130	12
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	(
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	313	309	17	220	30	157	113	296	100	474	652	60
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.00	0.24	0.24	0.09	0.42	0.42
Sat Flow, veh/h	1810	1783	99	1810	248	1291	1266	1254	422	1740	1544	143
Grp Volume(v), veh/h	8	0	19	20	0	31	0	0	143	103	0	142
Grp Sat Flow(s),veh/h/ln	1810	0	1883	1810	0	1539	1266	0	1677	1740	0	1687
Q Serve(g_s), s	0.2	0.0	0.5	0.6	0.0	1.1	0.0	0.0	4.5	2.6	0.0	3.4
Cycle Q Clear(g_c), s	0.2	0.0	0.5	0.6	0.0	1.1	0.0	0.0	4.5	2.6	0.0	3.4
Prop In Lane	1.00		0.05	1.00		0.84	1.00		0.25	1.00		0.08
Lane Grp Cap(c), veh/h	313	0	326	220	0	187	113	0	396	474	0	713
V/C Ratio(X)	0.03	0.00	0.06	0.09	0.00	0.17	0.00	0.00	0.36	0.22	0.00	0.20
Avail Cap(c_a), veh/h	427	0	444	854	0	726	512	0	923	724	0	1486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	22.0	24.8	0.0	25.0	0.0	0.0	20.3	14.2	0.0	11.6
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.3	0.0	0.6	0.0	0.0	8.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.3	0.3	0.0	0.5	0.0	0.0	2.2	1.2	0.0	1.6
LnGrp Delay(d),s/veh	21.9	0.0	22.1	25.1	0.0	25.6	0.0	0.0	21.1	14.4	0.0	11.8
LnGrp LOS	С		С	С		С			С	В		E
Approach Vol, veh/h		27			51			143			245	
Approach Delay, s/veh		22.0			25.4			21.1			12.9	
Approach LOS		С			С			С			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		17.0	11.9	21.0		13.7		32.9				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (q c+l1), s		2.5	4.6	6.5		3.1		5.4				
Green Ext Time (p_c), s		0.1	0.1	2.6		0.3		2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			17.3									
HCM 2010 LOS			В									

HCM 2010 Signalized Intersection Summary

12: N. Main St & Dinwiddie Ave

FASTC 2018 Base AM Int 11-18.syn Synchro 8 Light Report Cardno GS Page 4

FASTC 2018 Base AM Int 11-18.syn Synchro 8 Light Report Cardno GS Page 3

Intersection								
Int Delay, s/veh	1.3							
Movement		EBT	EBR		WBL	WBT	NBL	NBI
Vol, veh/h		19	11		2	48	5 5	INDI
Conflicting Peds, #/hr		0	0		0	0	0	(
Sign Control		Free	Free		Free	Free	Stop	Stor
RT Channelized		-	None		-	None	310p	None
Storage Length			100		247	-	0	NOIN
Veh in Median Storage, #		0	100		247	0	0	
Grade, %		0	-		-	0	0	
Peak Hour Factor		92	92		92	92	92	92
Heavy Vehicles, %		2	2		2	2	2	72
Mymt Flow		21	12		2	52	5	- 2
WWITE FIOW		21	12		2	52	J	(
Major/Minor		Major1		-	Najor2		Minor1	
Conflicting Flow All		0	0		21	0	78	21
Stage 1		-	-		-	-	21	2.1
Stage 2					-		57	
Critical Hdwy					4.12		6.42	6.22
Critical Hdwy Stg 1					7.12		5.42	0.22
Critical Hdwy Stg 2							5.42	
Follow-up Hdwy					2.218		3.518	3.318
Pot Cap-1 Maneuver					1595		925	1056
Stage 1					1070		1002	1000
Stage 2							966	
Platoon blocked, %			- :				700	
Mov Cap-1 Maneuver					1595		924	1056
Mov Cap-1 Maneuver					1373		924	1030
Stage 1							1002	
Stage 2							965	
Stage 2							703	
Approach		EB			WB		NB	
HCM Control Delay, s		0			0.3		8.7	
HCM LOS					0.5		Α	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT			
Capacity (veh/h)	997	-	-	1595	-			
HCM Lane V/C Ratio	0.013	-	-	0.001	-			
HCM Control Delay (s)	8.7	-	-	7.3	-			
HCM Lane LOS	А	-	-	A	-			
HCM 95th %tile Q(veh)	0			0				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBF
Vol. veh/h	0	5	1	0	0	(
Conflicting Peds, #/hr	0	0	0	0	0	(
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-		
Veh in Median Storage, #	0	-	-	0	0	
Grade, %	0	-	-	0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	1	0	0	(
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2	0	0	0		(
Stage 1	0	-	-	-	-	
Stage 2	2	-	-	-		
Critical Hdwy	6.42	6.22	4.12	-	-	
Critical Hdwy Stg 1	5.42	-	-	-	-	
Critical Hdwy Stg 2	5.42	-	-	-	-	
Follow-up Hdwy	3.518	3.318	2.218	-	-	
Pot Cap-1 Maneuver	1021	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	1021	-	-	-	-	
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	1021	-	-	-	-	
Mov Cap-2 Maneuver	1021	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	1021	-	-	-		
Approach	EB		NB		SB	
HCM Control Delay, s	EB		0		<u> </u>	
HCM LOS	-		0		U	
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	-					
HCM Lane V/C Ratio						
HCM Control Delay (s)	-					
HCM Lane LOS						
HCM 95th %tile Q(veh)						

Intersection								
Int Delay, s/veh	2.5							
Movement	EBL		EBR		NBL	NBT	SBT	SBF
Vol, veh/h	8		0		0	2	4	14
Conflicting Peds, #/hr	0		0		0	0	0	(
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-		
Veh in Median Storage, #	0		-		-	0	0	
Grade, %	0		-		-	0	0	
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	2		2		2	2	2	- 2
Mvmt Flow	9		0		0	2	4	15
Major/Minor	Minor2				Major1		Major2	
Conflicting Flow All	14		12		20	0	-	(
Stage 1	12		-		-	-	-	
Stage 2	2		-		-	-		
Critical Hdwy	6.42		6.22		4.12	-	-	
Critical Hdwy Stg 1	5.42		-		-	-	-	
Critical Hdwy Stg 2	5.42		-		-	-	-	
Follow-up Hdwy	3.518		3.318		2.218	-	-	
Pot Cap-1 Maneuver	1005		1069		1596	-	-	
Stage 1	1011		-		-	-	-	
Stage 2	1021		-		-	-	-	
Platoon blocked, %						-		
Mov Cap-1 Maneuver	1005		1069		1596	-	-	
Mov Cap-2 Maneuver	1005		-		-	-	-	
Stage 1	1011		-		-	-	-	
Stage 2	1021		-		-	-		
Approach	EB				NB		SB	
HCM Control Delay, s	8.6				0		0	
HCM LOS	A							
Minor Lane/Major Mvmt	NBL	NBT E	EBLn1	SBT	SBR			
Capacity (veh/h)	1596		1005	- 301	JUIN -			
HCM Lane V/C Ratio	1370		0.009					
HCM Control Delay (s)	0		8.6					
HCM Lane LOS	A		Α.					
HCM 95th %tile Q(veh)	0		0					

FASTC 2018 Base AM Int 11-18.syn Cardno GS

Base PM 10/1/2014

Intersection										
Int Delay, s/veh	7									
Movement	EBL	EBT	EBR	WE	L	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	113	12	15	8	170	6	31	35	229
Conflicting Peds, #/hr	0	0	0		0	0	0	0	0	0
Sign Control	Free	Free	Free	Fre	е	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None	-	-	None
Storage Length	125	-	50	10	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-		-	0	-	-	2	-
Grade, %	-	0	-		-	0	-	-	0	-
Peak Hour Factor	92	92	92	ç	6	96	96	93	93	93
Heavy Vehicles, %	0	18	31	1	1	20	0	8	3	5
Mvmt Flow	8	123	13	16	5	177	6	33	38	246
Major/Minor	Major1			Major	2			Minor1		
Conflicting Flow All	177	0	0	12	3	0	0	567	644	61
Stage 1	-	-	-		-	-	-	138	138	
Stage 2		-	-		-	-	-	429	506	-
Critical Hdwy	4.1	-	-	4.3	2	-	-	7.66	6.56	7
Critical Hdwy Stg 1		-	-		-	-	-	6.66	5.56	-
Critical Hdwy Stg 2	-	-	-		-	-	-	6.66	5.56	
Follow-up Hdwy	2.2	-	-	2.3	1	-	-	3.58	4.03	3.35
Pot Cap-1 Maneuver	1411	-	-	139	8	-	-	394	388	982
Stage 1	-	-	-		-	-	-	834	779	-
Stage 2	-	-	-		-	-	-	559	536	-
Platoon blocked, %		-	-			-	-			
Mov Cap-1 Maneuver	1411	-	-	139	8	-	-	339	340	982
Mov Cap-2 Maneuver	-	-	-		-	-	-	429	434	-
Stage 1	-	-	-		-	-	-	829	775	-
Stage 2		-			-	-	-	465	473	-
Approach	EB			W	В			NB		
HCM Control Delay, s	0.4			3.	7			13		
HCM LOS								В		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WE	L	WBT	WBR	SBLn1		
Capacity (veh/h)	764	1411	-	- 139	8	-	-	492		
HCM Lane V/C Ratio	0.415	0.005	-	- 0.11	8	-	-	0.068		
HCM Control Delay (s)	13	7.6		- 7	Q			12.9		

Intersection				
Int Delay, s/veh				
	0.01	ODT	000	
Movement	SBL	SBT	SBR	
Vol, veh/h	2	21	8	
Conflicting Peds, #/hr	0	0	0	
Sign Control	Stop	Stop	Stop	
RT Channelized	-	-	None	
Storage Length	-	-	-	
Veh in Median Storage, #	-	2	-	
Grade, %	-	0	-	
Peak Hour Factor	92	92	92	
Heavy Vehicles, %	0	5	13	
Mvmt Flow	2	23	9	
Major/Minor	Minor2			
Conflicting Flow All	601	644	89	
	506	506	- 09	
Stage 1	95	138		
Stage 2	7.5	6.6	7.16	
Critical Hdwy				
Critical Hdwy Stg 1	6.5	5.6	-	
Critical Hdwy Stg 2	6.5	5.6	2.42	
Follow-up Hdwy	3.5	4.05	3.43	
Pot Cap-1 Maneuver	388	384	917	
Stage 1	522	531	-	
Stage 2	907	774	-	
Platoon blocked, %				
Mov Cap-1 Maneuver	246	337	917	
Mov Cap-2 Maneuver	392	427	-	
Stage 1	519	468	-	
Stage 2	643	770	-	
Approach	SB			
HCM Control Delay, s	12.9			
HCM LOS	В			
TIOM EOO	Б			

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	764	1411	-	-	1398	-	-	492	
HCM Lane V/C Ratio	0.415	0.005	-	-	0.118	-	-	0.068	
HCM Control Delay (s)	13	7.6	-	-	7.9	-	-	12.9	
HCM Lane LOS	В	Α	-	-	Α	-	-	В	
HCM 95th %tile O(veh)	2.1	0	-		0.4	-		0.2	

Minor Lane/Major Mvmt

Intersection								
Int Delay, s/veh	3.3							
Movement		EBT	EBR		WBL	WBT	NBL	NB
Vol, veh/h		157	2		27	165	1	13
Conflicting Peds, #/hr		0	0		0	0	0	
Sign Control		Free	Free		Free	Free	Stop	Sto
RT Channelized		-	None		-	None	-	Nor
Storage Length		-	-		-	-	0	
Veh in Median Storage, #		0	-		-	0	0	
Grade, %		0	-		-	0	0	
Peak Hour Factor		92	92		92	92	92	9
Heavy Vehicles, %		7	0		28	7	0	
Mvmt Flow		171	2		29	179	1	15
Major/Minor		Major1		N	Major2		Minor1	
Conflicting Flow All		0	0		173	0	410	17
Stage 1		-	-			-	172	
Stage 2		-	-		-	-	238	
Critical Hdwy		-	-		4.38		6.4	6.2
Critical Hdwy Stg 1		-	-		-		5.4	
Critical Hdwy Stg 2		-	-		-		5.4	
Follow-up Hdwy		-	-		2.452	-	3.5	3.34
Pot Cap-1 Maneuver		-	-		1261	-	602	86
Stage 1		-	-		-	-	863	
Stage 2		-	-		-	-	806	
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-		1261	-	586	86
Mov Cap-2 Maneuver		-	-		-	-	586	
Stage 1		-	-		-	-	863	
Stage 2		-	-		-	-	785	
Approach		EB			WB		NB	
HCM Control Delay, s		0			1.1		10.1	
HCM LOS							В	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT			
Capacity (veh/h)	861	EDI	EDR -	1261	WDI -			
HCM Lane V/C Ratio	0.175			0.023	-			
HCM Control Delay (s)	10.1			7.9	0			
HCM Lane LOS	10.1 B		-	7.9 A	A			

Intersection	6.7										
Int Delay, s/veh	6.7										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NB
Vol, veh/h	9	44	12		9	58	14		57	116	1
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	Sto
RT Channelized	-	-	None		-	-	None		-	-	Non
Storage Length	-	-	50		-	-	-		150	-	2
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	9
Heavy Vehicles, %	0	5	20		23	15	25		2	5	
Mvmt Flow	10	48	13		10	63	15		62	126	2
Major/Minor	Major1				Major2				Minor1		
Conflicting Flow All	78	0	0		48	0	0		166	165	4
Stage 1	-	-	-		-	-	-		67	67	
Stage 2	-	-	-		-	-	-		99	98	
Critical Hdwy	4.1	-	-		4.33	-	-		7.12	6.55	6.2
Critical Hdwy Stg 1	-	-	-		-	-	-		6.12	5.55	
Critical Hdwy Stg 2	-	-	-		-	-	-		6.12	5.55	
Follow-up Hdwy	2.2	-	-		2.407	-	-		3.518	4.045	3.30
Pot Cap-1 Maneuver	1533	-	-		1435	-	-		798	722	102
Stage 1		-	-		-	-	-		943	833	
Stage 2	-	-	-		-	-	-		907	808	
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1533	-	-		1435	-	-		775	712	102
Mov Cap-2 Maneuver	-	-	-		-	-	-		775	712	
Stage 1	-	-	-		-	-	-		936	827	
Stage 2		-	-		-	-	-		883	802	
Approach	EB				WB				NB		
HCM Control Delay, s	1				0.8				10.5		
HCM LOS									В		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	775	712	1024	1533	-	-	1435	-	-	678	
HCM Lane V/C Ratio	0.08	0.177	0.019	0.006	-	-	0.007		_	0.043	
HCM Control Delay (s)	10	11.1	8.6	7.4	0	-	7.5	0	-	10.6	
HCM Lane LOS	В	В	Α.	Α.	A	-	7.5 A	A		В	
HCM 95th %tile Q(veh)	0.3	0.6	0.1	0	,,		0			0.1	

Intersection
Int Delay, s/veh
Movement

Free Free

Major1

4.1

2.2 1572

1572

92 92

92

Free

Intersection							
Int Delay, s/veh	5.1						
Movement	EBL	EBT	EBR		WBL	WBT	WBR
Vol, veh/h	3	0	1		67	0	58
Conflicting Peds, #/hr	0	0	0		0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None
Storage Length	-	-	-		-	-	-
Veh in Median Storage, #	-	0	-		-	0	-
Grade, %	-	0	-		-	0	-
Peak Hour Factor	92	92	92		92	92	92
Heavy Vehicles, %	0	0	0		2	0	3
Mvmt Flow	3	0	1		73	0	63
Major/Minor	Minor2				Minor1		
Conflicting Flow All	213	185	48		181	181	96
Stage 1	85	85	-		96	96	-
Stage 2	128	100	-		85	85	-
Critical Hdwy	7.1	6.5	6.2		7.12	6.5	6.23
Critical Hdwy Stg 1	6.1	5.5	-		6.12	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-		6.12	5.5	-
Follow-up Hdwy	3.5	4	3.3		3.518	4	3.327
Pot Cap-1 Maneuver	748	713	1027		781	717	958
Stage 1	928	828	-		911	819	-
Stage 2	881	816	-		923	828	-
Platoon blocked, %							
Mov Cap-1 Maneuver	692	704	1027		772	708	958
Mov Cap-2 Maneuver	692	704	-		772	708	-
Stage 1	928	817	-		911	819	-
Stage 2	823	816	-		910	817	-
Approach	EB				WB		
HCM Control Delay, s	9.8				10.1		
HCM LOS	А				В		
Minor Lane/Major Mvmt	NBL	NBT	NBR		WBLn1	SBL	SBT
Capacity (veh/h)	1572	-	-	753	848	1382	-
HCM Lane V/C Ratio	-	-	-	0.006	0.16	0.013	-

HCM Control Delay (s)	0	-	-	9.8	10.1	7.6	0	-		
HCM Lane LOS	Α	-	-	Α	В	Α	Α	-		
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-		

Vol, veh/h	11	6	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized			None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	64	24	0
Mvmt Flow	12	7	11
Major/Minor	Minor2		
Major/Minor		457	7.5
Conflicting Flow All	220	157	71
Stage 1	90	90	-
Stage 2	130	67	-
Critical Hdwy	7.74	6.74	6.2
Critical Hdwy Stg 1	6.74	5.74	-
Critical Hdwy Stg 2	6.74	5.74	-
Follow-up Hdwy	4.076	4.216	3.3
Pot Cap-1 Maneuver	622	697	997
Stage 1	785	779	-
Stage 2	745	798	-
Platoon blocked, %			
Mov Cap-1 Maneuver	522	687	997
Mov Cap-2 Maneuver	522	687	-
Stage 1	780	774	-
Stage 2	615	792	
<u> </u>			
A	CD		
Approach	SB		
HCM Control Delay, s	10.6		
HCM LOS	В		
Minor Lane/Maior Mymt			

SBT SBR

Intersection					
Int Delay, s/veh					
, , ,					
Movement	SBL	SBT	SBR		
Vol, veh/h	17	44	0		-
Conflicting Peds, #/hr	0	0	0		
Sign Control	Free	Free	Free		
RT Channelized	-	-	None		
Storage Length			-		
Veh in Median Storage, #		0	-		
Grade, %	-	0	-		
Peak Hour Factor	92	92	92		
Heavy Vehicles, %	21	14	0		
Mymt Flow	18	48	0		
	10	10	3		
Major/Minor	Major2				
Conflicting Flow All	100	0	0		
Stage 1	-	-	-		
Stage 2		-	-		
Critical Hdwy	4.31	-	-		
Critical Hdwy Stg 1	-	-	-		
Critical Hdwy Stg 2	- 0.000	-	-		
Follow-up Hdwy	2.389	-	-		
Pot Cap-1 Maneuver	1382	-	-		
Stage 1	-	-	-		
Stage 2	-	-	-		
Platoon blocked, %	4000	-	-		
Mov Cap-1 Maneuver	1382	-	-		
Mov Cap-2 Maneuver	-	-	-		
Stage 1	-	-	-		
Stage 2	-	-	-		
Approach	SB				
HCM Control Delay, s	2.1				
HCM LOS					
Minor Lane/Major Mymt					

Int Delay, s/veh	2.3							
in boldy, siven	2.3							
Movement	EBL		EBR		NBL	NBT	SBT	SBR
Vol, veh/h	12		19		41	80	30	82
Conflicting Peds, #/hr	0		0		0	0	0	0
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	-
Veh in Median Storage, #	0		-		-	0	0	-
Grade, %	0		-		-	0	0	-
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	0		6		2	4	15	0
Mymt Flow	13		21		45	87	33	89
Major/Minor	Minor2				Major1		Major2	
Conflicting Flow All	253		77		122	0	-	0
Stage 1	77		-		-	-		
Stage 2	176				-	-		
Critical Hdwy	6.4		6.26		4.12	-		
Critical Hdwy Stg 1	5.4		-			-		
Critical Hdwy Stg 2	5.4					-		
Follow-up Hdwy	3.5		3.354		2.218	-		
Pot Cap-1 Maneuver	740		973		1465	-		
Stage 1	951		713		-	_		
Stage 2	859							
Platoon blocked, %	037							
Mov Cap-1 Maneuver	716		973		1465			-
Mov Cap-1 Maneuver	716		7/3		1405			
Stage 1	951							
Stage 2	832				-			
Stage 2	032		-		-	•	•	-
Approach	EB				NB		SB	
	9.4				2.6		<u> </u>	
HCM Control Delay, s					2.0		U	
HCM LOS	А							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	1465	IND I	854	301	JUIN -			
HCM Lane V/C Ratio	0.03		0.039		-			
HCM Control Delay (s)	7.5	0	9.4	-				
HCM Lane LOS	7.5 A	A	9.4 A	-				

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Cardno GS
Synchro 8 Light Report
Page 7

FASTC 2018 Base PM Int 1-10.syn Cardno GS

HCM 95th %tile Q(veh)

Intersection											
Int Delay, s/veh	2.4										
· ·											
Movement	EBL	EBT	EBR	WB	_ V	VBT	WBR		NBL	NBT	NB
Vol, veh/h	1	29	7		1	77	1		29	1	
Conflicting Peds, #/hr	0	0	0)	0	0		0	0	
Sign Control	Free	Free	Free	Fre	. F	ree	Free		Stop	Stop	Sto
RT Channelized	-	-	None			-	None		-	-	Nor
Storage Length		-	-			-	-		-	-	
Veh in Median Storage, #		0	-			0	-		-	0	
Grade, %		0	-			0	-		-	0	
Peak Hour Factor	92	92	92	9	2	92	92		92	92	Ç
Heavy Vehicles, %	27	19	0)	4	0		4	0	
Mymt Flow	1	32	8		1	84	1		32	1	
Major/Minor	Major1			Major)				Minor1		
Conflicting Flow All	85	0	0	3		0	0		128	125	
Stage 1	-	-	-			-	-		38	38	
Stage 2		-	-				-		90	87	
Critical Hdwy	4.37		-	4.	1		-		7.14	6.5	6
Critical Hdwy Stg 1	-					-			6.14	5.5	
Critical Hdwy Stg 2									6.14	5.5	
Follow-up Hdwy	2.443			2.)	-			3.536	4	3
Pot Cap-1 Maneuver	1368		-	158			-		841	769	104
Stage 1	-				-	-			972	867	
Stage 2									912	827	
Platoon blocked, %						-					
Mov Cap-1 Maneuver	1368			158	4				834	767	104
Mov Cap-2 Maneuver		-	-		-	-	-		834	767	
Stage 1		-	-				-		971	866	
Stage 2		-	-		-	-	-		905	826	
3											
Approach	EB			W	3				NB		
HCM Control Delay, s	0.2			0.					9.5		
HCM LOS									Α		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WB	L V	VBT	WBR	SBLn1			
Capacity (veh/h)	837	1368	-	- 158		-	-	887			
HCM Lane V/C Ratio	0.04	0.001	-	- 0.00	1	-	-	0.007			
HCM Control Delay (s)	9.5	7.6	0	- 7.	3	0	-	9.1			
HCM Lane LOS	A	Α	Α	- 1	A	Α	-	Α			
LICM OF the O(till = O(till + O	0.1				`			^			

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	0	2	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	6
Mvmt Flow	0	2	4
Major/Minor	Minor2		
Conflicting Flow All	125	127	84
Stage 1	86	86	-
Stage 2	39	41	
Critical Hdwy	7.1	6.5	6.26
Critical Hdwy Stg 1	6.1	5.5	0.20
Critical Hdwy Stg 2	6.1	5.5	
Follow-up Hdwy	3.5	4	3.354
Pot Cap-1 Maneuver	854	767	964
Stage 1	927	827	704
Stage 2	927	865	
Platoon blocked, %	901	600	-
Mov Cap-1 Maneuver	851	765	964
Mov Cap-1 Maneuver	851	765	904
Stage 1	926	826	-
Stage 2	978	864	
Stage 2	770	004	-
Approach	SB		
HCM Control Delay, s	9.1		
HCM LOS	Α		
Minor Lang/Major Mumt			
Minor Lane/Major Mvmt			

10/1/2014

Intersection	1.3									
Int Delay, s/veh	1.3									
Movement	EBL	EBT	EBR	WBL	WBT	WBR		NBL	NBT	NBI
Vol, veh/h	1	25	3	0	65	0		14	0	
Conflicting Peds, #/hr	0	0	0	0	0	0		0	0	(
Sign Control	Free	Free	Free	Free	Free	Free		Stop	Stop	Sto
RT Channelized	-	-	None	-	-	None				Non
Storage Length	-	-	-	-	-	-		-	-	
Veh in Median Storage, #	-	0	-	-	0	-		-	0	
Grade, %	-	0	-	-	0	-		-	0	
Peak Hour Factor	92	92	92	92	92	92		92	92	92
Heavy Vehicles, %	27	18	0	0	4	0		1	0	(
Mymt Flow	1	27	3	0	71	0		15	0	(
Major/Minor	Major1			Major2			M	linor1		
Conflicting Flow All	71	0	0	30	0	0		102	102	29
Stage 1	-	-	-	-	-	-		31	31	
Stage 2	-	-	-	-	-	-		71	71	
Critical Hdwy	4.37	-	-	4.1	-	-		7.11	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-		6.11	5.5	
Critical Hdwy Stg 2	-	-	-	-	-	-		6.11	5.5	
Follow-up Hdwy	2.443	-	-	2.2	-	-		3.509	4	3.3
Pot Cap-1 Maneuver	1385	-	-	1596	-	-		881	792	1052
Stage 1		-	-		-	-		988	873	
Stage 2		-	-		-	-		941	840	
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	1385	-	-	1596	-	-		879	791	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-		879	791	
Stage 1		-	-		-	-		987	872	
Stage 2	-	-			-	-		940	840	
Approach	EB			WB				NB		
HCM Control Delay, s	0.3			0				9.2		
HCM LOS								Α		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	879	1385	-	- 1596	-	-	980			
HCM Lane V/C Ratio	0.017	0.001	-		-	-	0.001			
HCM Control Delay (s)	9.2	7.6	0	- 0	-	-	8.7			
HCM Lane LOS	А	Α	Α	- A	-	-	Α			
LICM DEth 0/tile O(yeh)	0.1	^		0			^			

Intersection			
Int Delay, s/veh			
,			
Movement	SBL	SBT	SBR
Vol. veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	310p	Jiup -	None
Storage Length	-	-	NOTIC
Veh in Median Storage, #		0	
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	6
Mymt Flow	0	0	1
WINTER FOW	U	U	- 1
Major/Minor	Minor2		
Conflicting Flow All	102	104	71
Stage 1	71	71	-
Stage 2	31	33	-
Critical Hdwy	7.1	6.5	6.26
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.354
Pot Cap-1 Maneuver	884	790	980
Stage 1	944	840	-
Stage 2	991	872	-
Platoon blocked, %			
Mov Cap-1 Maneuver	883	789	980
Mov Cap-2 Maneuver	883	789	-
Stage 1	943	840	-
Stage 2	990	871	-
3			
	CD		
Approach	SB		
HCM Control Delay, s	8.7		
HCM LOS	Α		

Minor Lane/Major Mvmt

HCM 2010 TWSC

7: Armistead Ave/FASTC Driver Training & Military Rd

HCM 95th %tile Q(veh)

Intersection										
Int Delay, s/veh	2.4									
Movement	FBI	EBT	EBR		WBI	WBT	WBR	NBL	NBT	NBR
Vol. veh/h	0	0	1		0	0	0	1	0	(VDIV
Conflicting Peds, #/hr	0	0	0		0	0	0	0	0	(
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Free	Free	Free
RT Channelized	- Stop	- Stop	None		- -	- -	None	-	-	None
Storage Length			-		-		-			140110
Veh in Median Storage, #		0				0			0	
Grade, %	-	0	-		-	0	-	-	0	
Peak Hour Factor	92	92	92		92	92	92	92	92	92
Heavy Vehicles, %	0	27	0		0	6	6	0	0	0
Mymt Flow	0	0	1		0	0	0	1	0	0
Major/Minor	Minor2				Minor1			Major1		
Conflicting Flow All	3	3	1		4	3	0	1	0	0
Stage 1	1	1	-		2	2	-	-	-	-
Stage 2	2	2	-		2	1	-	-	-	
Critical Hdwy	7.1	6.77	6.2		7.1	6.56	6.26	4.1	-	
Critical Hdwy Stg 1	6.1	5.77	-		6.1	5.56	-	-	-	
Critical Hdwy Stg 2	6.1	5.77	-		6.1	5.56	-	-	-	
Follow-up Hdwy	3.5	4.243	3.3		3.5	4.054	3.354	2.2	-	
Pot Cap-1 Maneuver	1024	845	1090		1022	885	-	1635	-	
Stage 1	1027	848	-		1026	886	-	-	-	
Stage 2	1026	847	-		1026	887	-	-	-	
Platoon blocked, %									-	
Mov Cap-1 Maneuver	-	844	1090		1020	884	-	1635	-	
Mov Cap-2 Maneuver	-	844	-		1020	884	-	-	-	
Stage 1	1026	848	-		1025	885	-	-	-	-
Stage 2	1025	846	-		1025	887	-		-	
Approach	EB				WB			NB		
HCM Control Delay, s	LD				0			7.2		
HCM LOS	-				A			1.2		
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1635	-	-	-	-	-	-	-		
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-		
HCM Control Delay (s)	7.2	0	-	-	0	0	-	-		
HCM Lane LOS	A	Α	-	-	Α	Α	-	-		

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	0	1	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	27	0	0
Mvmt Flow	0	1	0
Major/Minor	Major2		
Conflicting Flow All	0	0	0
	0		0
Stage 1		-	
Stage 2	4.37	-	-
Critical Hdwy		-	-
Critical Hdwy Stg 1		-	-
Critical Hdwy Stg 2	2.443		-
Follow-up Hdwy	2.443	-	-
Pot Cap-1 Maneuver			-
Stage 1	-	-	-
Stage 2 Platoon blocked, %	-	-	
Mov Cap-1 Maneuver		-	-
Mov Cap-1 Maneuver Mov Cap-2 Maneuver	-	-	
Stage 1			
Stage 2			
Staye 2			
Approach	SB		
HCM Control Delay, s	0		
HCM LOS			
Minor Lano/Major Mumt			
Minor Lane/Major Mvmt			

FASTC 2018 Base PM Int 1-10.syn Cardno GS

HCM 95th %tile Q(veh)

Synchro 8 Light Report Page 13 FASTC 2018 Base PM Int 1-10.syn Cardno GS

Int Delay, s/veh										
Int Delay, s/veh	Intersection									
Vol, veh/h 1 20 85 2 1 Conflicting Peds, #/hr 0 0 0 0 0 Sign Control Free Free Free Free Free Stop RT Channelized - None - None - Storage Length - - 0 0 - 0 Veh in Median Storage, # - 0 0 - 0 0 Grade, % - 0 0 - 0 0 - 0 0 Peak Hour Factor 92 9		0.4								
Vol, veh/h 1 20 85 2 1 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Free Free Free Free Free Stop RT Cannelized - None - None - Storage Length 0 0 0 0 0 0 0 0 0 0 Grade, % 0 0 0 0 0 0 0 0 Peak Hour Factor 92 </td <td></td>										
Conflicting Peds, #/hr 0 0 0 0 0 Sign Control Free Free Free Free Stop RT Channelized - None - None - Storage Length 0 0 0 Veh in Median Storage, # - 0 0 0 0 Grade, % - 0 0 0 0 0 Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 0 18 2 5 23 Mvmt Flow 1 22 92 2 1 Major/Minor Major/Minor Major/Property Major/Property Minor/Property Minor/Property Minor/Property Minor/Property Minor/Property 2 1 117 Stage 1 - 0 - 0 117 Stage 1 - 0 - 0 6.63 Critical Howy Stg 2<	Movement	EBL	EBT				WBT	WBR	SBL	SBF
Sign Control Free Free Free Free Free Free Free Stop RT Channelized None None - Storage Length - - 0 O D O D O D O D D D D D D D D D D D D D D	Vol, veh/h	1	20				85	2	1	
Sign Control Free Free Free Free Free Free Free Free Free Free Free	Conflicting Peds, #/hr	0	0				0	0	0	(
RT Channelized None None Storage Length - - 0 Veh in Median Storage, # - 0 0 - 0 Grade, % - 0 0 - 0 Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 0 18 2 5 23 Mvmt Flow 1 22 92 2 1 1 2 92 2 1 1 2 92 2 1 1 2 92 2 1 1 2 92 2 1 1 2 92 2 1 1 2 92 2 1 1 2 92 2 1 1 2 92 2 1 1 1 2 92 2 1 1 3 3 3 3 3 3 3 3 3 3 3 </td <td></td> <td>Free</td> <td>Free</td> <td></td> <td></td> <td></td> <td>Free</td> <td>Free</td> <td>Stop</td> <td>Sto</td>		Free	Free				Free	Free	Stop	Sto
Veh in Median Storage, # - 0 - 0 Grade, % - 0 0 - 0 Peak Hour Factor 92 92 92 92 92 Heavy Vehicles, % 0 18 2 5 23 Mvmt Flow 1 22 92 2 1 Major/Minor Major/D Minor2 Minor2 Conflicting Flow All 95 0 - 0 117 Stage 1 - - 0 93 Stage 2 - 24 Critical Hdwy 4.1 - - 6.63 Critical Hdwy Stg 2 - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Critical Hdwy Stg 2 - - 5.63 Follow-up Hdwy 2.2 - - 3.707 Pot Cap-1 Maneuver 1512 - 831 Stage 1 - - 831			None				-	None		None
Grade, % - 0 0 - 0 Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92 93 33 34	Storage Length	-	-				-		0	
Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 93	Veh in Median Storage, #	-	0				0	-	0	
Heavy Vehicles, % 0 18 2 5 23 23 24 292 2 1 25 23 25 23 25 23 25 25	Grade, %	-	0				0	-	0	
Mvmt Flow 1 22 92 2 1 Major/Minor Major1 Major2 Minor2 Conflicting Flow All 95 0 - 0 117 Stage 1 - - - 93 Stage 2 - - - 24 Critical Hdwy 4.1 - - 6.63 Critical Hdwy Stg 1 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Critical Hdwy Stg 1 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Stage 2 - - - 831 Stage 1 - <td>Peak Hour Factor</td> <td>92</td> <td>92</td> <td></td> <td></td> <td></td> <td>92</td> <td>92</td> <td>92</td> <td>9:</td>	Peak Hour Factor	92	92				92	92	92	9:
Major/Minor Major1 Major2 Minor2 Conflicting Flow All 95 0 - 0 117 Stage 1 - - - 93 Stage 2 - - - 24 Critical Hdwy 4.1 - - 6.63 Critical Hdwy Stg 1 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Critical Hdwy Stg 2 - - - 5.63 Follow-up Hdwy 2.2 - - 3.707 Pot Cap-1 Maneuver 1512 - 831 Stage 1 - - 881 Stage 2 - - 947 Platoon blocked, % - - Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver - - 830 Stage 1 - - 830 Stage 2 - - 946 <td>Heavy Vehicles, %</td> <td>0</td> <td>18</td> <td></td> <td></td> <td></td> <td>2</td> <td>5</td> <td>23</td> <td>(</td>	Heavy Vehicles, %	0	18				2	5	23	(
Conflicting Flow All 95 0 - 0 1177 Stage 1 93 Stage 2 93 Critical Hdwy 4.1 6.63 Critical Hdwy Stg 1 5.63 Critical Hdwy Stg 2 5.63 Follow-up Hdwy 2.2 5.63 Follow-up Hdwy 2.2 8311 Stage 1 8811 Stage 2 881 Stage 2 8830 Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver 1512 - 830 Mov Cap-2 Maneuver 1512 - 830 Stage 1 830 Mov Cap-2 Maneuver 1512 - 830 Stage 1 830 Stage 2 881 Stage 2 881 Stage 2 881	Mvmt Flow	1	22				92	2	1	:
Conflicting Flow All 95 0 - 0 1177 Stage 1 93 Stage 2 93 Critical Hdwy 4.1 6.63 Critical Hdwy Stg 1 5.63 Critical Hdwy Stg 2 5.63 Follow-up Hdwy 2.2 5.63 Follow-up Hdwy 2.2 8311 Stage 1 8811 Stage 2 881 Stage 2 8830 Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver 1512 - 830 Mov Cap-2 Maneuver 1512 - 830 Stage 1 830 Mov Cap-2 Maneuver 1512 - 830 Stage 1 830 Stage 2 881 Stage 2 881 Stage 2 881										
Conflicting Flow All 95 0 - 0 117 Stage 1 93 Stage 2 24 Critical Hdwy 4.1 6.63 Critical Hdwy Stg 1 5.63 Critical Hdwy Stg 2 5.63 Critical Hdwy Stg 2 5.63 Follow-up Hdwy 2.2 - 5.63 Stage 1 8831 Stage 1 8831 Stage 2 8831 Mov Cap-1 Maneuver 1512 - 8330 Mov Cap-2 Maneuver 1512 - 830 Mov Cap-2 Maneuver 1512 - 830 Mov Cap-2 Maneuver 1512 - 830 Stage 1 830 Mov Cap-2 Maneuver 1512 - 830 Stage 1 830 Mov Cap-2 Maneuver 1512 - 8430 Stage 1 8430 Stage 2	Maior/Minor	Maior1					Major2		Minor2	
Stage 1 - - 93 Stage 2 - - 24 Critical Hdwy 4.1 - - 6.63 Critical Hdwy Stg 1 - - 5.63 Critical Hdwy Stg 2 - - 5.63 Follow-up Hdwy 2.2 - 3.707 Pot Cap-1 Maneuver 1512 - 831 Stage 1 - - 881 Stage 2 - - 947 Platoon blocked, % - - - Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver - - 830 Stage 1 - - 881 Stage 2 - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9			0				-	0		9:
Stage 2			-							,
Critical Hdwy 4.1 - 6.63 Critical Hdwy Stg 1 - - 5.63 Critical Hdwy Stg 2 - - 5.63 Critical Hdwy Stg 2 - - 5.63 Follow-up Hdwy 2.2 - 3.707 Pot Cap-1 Maneuver 1512 - 831 Stage 1 - - 881 Stage 2 - - 947 Platoon blocked, % Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver - - 830 Stage 1 - - 881 Stage 2 - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9			-				-			
Critical Hdwy Stg 1 - - 5.63 Critical Hdwy Stg 2 - - 5.63 Follow-up Hdwy 2.2 - 3.707 Pot Cap-1 Maneuver 1512 - 831 Stage 1 - - 881 Stage 2 - - 947 Platoon blocked, % Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver - - 830 Stage 1 - - 881 Stage 2 - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9		4 1								6.3
Critical Hdwy Sig 2 - - 5.63 Follow-up Hdwy 2.2 - - 3.707 Pot Cap-1 Maneuver 1512 - 831 Stage 1 - - 881 Stage 2 - - 947 Platoon blocked, % - - - Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver - - 830 Stage 1 - - 881 Stage 2 - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9										0
Follow-up Hdwy 2.2 - 3.707 Pot Cap-1 Maneuver 1512 - 831 Stage 1 881 Stage 2 947 Platoon blocked, % 830 Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver - 830 Stage 1 881 Stage 2 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9										
Pot Cap-1 Maneuver 1512 - 831 Stage 1 - - - 881 Stage 2 - - - 947 Platoon blocked, % - - - - Mov Cap-1 Maneuver 1512 - - 830 Mov Cap-2 Maneuver - - - 831 Stage 1 - - - 881 Stage 2 - - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9		2.2	-				-	-		3.:
Stage 1 - - 881 Stage 2 - - 947 Platoon blocked, % - - Mov Cap-1 Maneuver 1512 - 830 Mov Cap-2 Maneuver - - 830 Stage 1 - - 881 Stage 2 - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9		1512	-				-	-	831	970
Stage 2 - - 947 Platoon blocked, % - - - Mov Cap-1 Maneuver 1512 - - 830 Mov Cap-2 Maneuver - - 830 Stage 1 - - 881 Stage 2 - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9		-	-				-	-	881	
Platoon blocked, % - - Mov Cap-1 Maneuver 1512 - - 830 Mov Cap-2 Maneuver - - - 830 Stage 1 - - - 881 Stage 2 - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9		-	-				-	-	947	
Mov Cap-2 Maneuver - - - 830 Stage 1 - - - 881 Stage 2 - - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9			-				-			
Stage 1 - - - 881 Stage 2 - - - 946 Approach EB WB SB HCM Control Delay, s 0.4 0 8.9	Mov Cap-1 Maneuver	1512	-				-	-	830	970
Stage 2 - - - 946 Approach EB WB SB HCM Control Delay, S 0.4 0 8.9	Mov Cap-2 Maneuver	-	-				-	-	830	
Approach EB WB SB HCM Control Delay, s 0.4 0 8.9	Stage 1	-	-				-	-	881	
HCM Control Delay, s 0.4 0 8.9	Stage 2	-	-				-	-	946	
HCM Control Delay, s 0.4 0 8.9										
HCM Control Delay, s 0.4 0 8.9	Annroach	FR					WB		SB	
HCM LOS A	HCM LOS	0.1					Ü		Α.	
	110111 200								,,	
Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1	Minor Lane/Maior Mymt	FRI	FBT	WBT	WBR	SBI n1				
Capacity (veh/h) 1512 931										
HCM Lane V/C Ratio 0.001 0.005										
HCM Control Delay (s) 7.4 0 - 8.9										
HCM Lane LOS A A A					-					
HCM 95th %tile Q(veh) 0 0				-	-					

FASTC 2018 Base PM Int 1-10.syn Cardno GS

Base PM 10/22/2014

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Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	10	16	164	89	4	521	53	431	
v/c Ratio	0.07	0.06	0.54	0.16	0.01	0.79	0.19	0.48	
Control Delay	43.0	0.4	40.5	6.3	17.0	31.5	11.3	14.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.0	0.4	40.5	6.3	17.0	31.5	11.3	14.3	
Queue Length 50th (ft)	5	0	74	0	1	217	12	121	
Queue Length 95th (ft)	24	0	166	34	8	394	33	227	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	235	348	618	626	608	1113	338	1428	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.05	0.27	0.14	0.01	0.47	0.16	0.30	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 10: S. Main St & 8th St/W Entrance Rd

Base PM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7		र्स	7	7	1>		7	1	
Volume (veh/h)	1	8	15	130	21	82	4	384	96	50	404	6
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	170.1	190.0	190.0	185.5	171.2	190.0	182.7	190.0	166.7	182.8	190.0
Adj Flow Rate, veh/h	1	9	16	141	23	89	4	417	104	53	425	6
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	13	13	0	5	5	11	0	4	4	14	4	4
Cap, veh/h	12	112	119	205	33	263	476	554	138	288	948	13
Arrive On Green	0.07	0.07	0.07	0.13	0.13	0.13	0.39	0.39	0.39	0.05	0.53	0.53
Sat Flow, veh/h	169	1523	1615	1529	249	1455	972	1412	352	1587	1798	25
Grp Volume(v), veh/h	10	0	16	164	0	89	4	0	521	53	0	431
Grp Sat Flow(s),veh/h/ln	1693	0	1615	1779	0	1455	972	0	1765	1587	0	1823
Q Serve(g_s), s	0.4	0.0	0.6	6.0	0.0	3.6	0.2	0.0	17.3	1.2	0.0	9.9
Cycle Q Clear(g_c), s	0.4	0.0	0.6	6.0	0.0	3.6	1.0	0.0	17.3	1.2	0.0	9.9
Prop In Lane	0.10		1.00	0.86		1.00	1.00		0.20	1.00		0.01
Lane Grp Cap(c), veh/h	125	0	119	238	0	263	476	0	693	288	0	961
V/C Ratio(X)	0.08	0.00	0.13	0.69	0.00	0.34	0.01	0.00	0.75	0.18	0.00	0.45
Avail Cap(c_a), veh/h	249	0	238	655	0	603	739	0	1169	448	0	1638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	0.0	29.4	28.1	0.0	24.3	13.1	0.0	17.8	12.9	0.0	9.9
Incr Delay (d2), s/veh	0.3	0.0	0.5	3.5	0.0	0.8	0.0	0.0	1.7	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	3.1	0.0	1.5	0.0	0.0	8.7	0.6	0.0	5.0
LnGrp Delay(d),s/veh	29.6	0.0	29.9	31.6	0.0	25.0	13.1	0.0	19.5	13.2	0.0	10.3
LnGrp LOS	С		С	С		С	В		В	В		В
Approach Vol, veh/h		26			253			525			484	
Approach Delay, s/veh		29.8			29.3			19.4			10.6	
Approach LOS		С			С			В			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		15.1	9.2	32.7		11.0		41.8				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (g_c+I1), s		8.0	3.2	19.3		2.6		11.9				
Green Ext Time (p_c), s		1.1	0.0	7.4		0.0		8.4				
Intersection Summary												
HCM 2010 Ctrl Delay			18.2									
HCM 2010 LOS			В									

FASTC 2018 Base PM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 1

FASTC 2018 Base PM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 2

Base PM 10/22/2014

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	47	227	230	251	277	58
v/c Ratio	0.15	0.33	0.28	0.17	0.54	0.11
Control Delay	21.0	2.9	4.0	3.1	19.2	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	2.9	4.0	3.1	19.2	5.9
Queue Length 50th (ft)	8	0	0	0	43	0
Queue Length 95th (ft)	42	29	53	58	152	22
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1060	838	924	1720	1452	1414
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.27	0.25	0.15	0.19	0.04
Intersection Summary						

HCM 2010 Signalized Intersection Summary 11: S. Main St & Church St

Base PM 10/22/2014

	•	•	1	†	ţ	4	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	7	7	۳	†	↑	7	
Volume (veh/h)	43	209	212	231	255	53	
Number	7	14	5	2	6	16	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	171.2	172.7	179.2	172.7	166.7	190.0	
Adj Flow Rate, veh/h	47	227	230	251	277	58	
Adj No. of Lanes	1	1	1	1	1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	11	10	6	10	14	0	
Cap, veh/h	307	476	505	915	421	408	
Arrive On Green	0.19	0.19	0.14	0.53	0.25	0.25	
Sat Flow, veh/h	1630	1468	1707	1727	1667	1615	
Grp Volume(v), veh/h	47	227	230	251	277	58	
Grp Sat Flow(s),veh/h/ln	1630	1468	1707	1727	1667	1615	
Q Serve(g_s), s	1.0	5.3	3.7	3.4	6.3	1.2	
Cycle Q Clear(g_c), s	1.0	5.3	3.7	3.4	6.3	1.2	
Prop In Lane	1.00	1.00	1.00			1.00	
Lane Grp Cap(c), veh/h	307	476	505	915	421	408	
V/C Ratio(X)	0.15	0.48	0.46	0.27	0.66	0.14	
Avail Cap(c_a), veh/h	958	1062	875	2477	1567	1519	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	14.4	11.5	8.9	5.5	14.2	12.3	
Incr Delay (d2), s/veh	0.3	0.9	0.6	0.1	0.7	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.5	4.6	1.8	1.6	2.9	0.5	
LnGrp Delay(d),s/veh	14.7	12.4	9.5	5.6	14.9	12.4	
LnGrp LOS	В	В	Α	Α	В	В	
Approach Vol, veh/h	274			481	335		
Approach Delay, s/veh	12.8			7.5	14.5		
Approach LOS	В			Α	В		
Timer	1	2	3	4	5	6	7 8
Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		28.5		14.0	11.8	16.8	
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0	
Max Green Setting (Gmax), s		61.0		25.0	15.0	40.0	
Max Q Clear Time (g_c+l1), s		5.4		7.3	5.7	8.3	
Green Ext Time (p_c), s		2.5		1.1	0.5	2.4	
Intersection Summary							
HCM 2010 Ctrl Delay			11.0				
HCM 2010 LOS			В				

FASTC 2018 Base PM Int 11-18.syn Cardno GS Synchro 8 Light Report Page 1 FASTC 2018 Base PM Int 11-18.syn Cardno GS Synchro 8 Light Report Page 2 Queues 12: N. Main St & Dinwiddie Ave Base PM 10/22/2014

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	22	31	50	102	8	265	24	295	
v/c Ratio	0.08	0.11	0.17	0.31	0.02	0.46	0.05	0.43	
Control Delay	27.3	22.7	25.9	14.3	17.4	20.2	10.6	14.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.3	22.7	25.9	14.3	17.4	20.2	10.6	14.3	
Queue Length 50th (ft)	6	6	12	7	2	57	5	67	
Queue Length 95th (ft)	29	33	50	53	12	165	17	135	
Internal Link Dist (ft)		598		847		888		606	
Turn Bay Length (ft)	100		150		100		100		
Base Capacity (vph)	542	551	1084	988	762	1181	603	1553	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.06	0.05	0.10	0.01	0.22	0.04	0.19	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 12: N. Main St & Dinwiddie Ave

Base PM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	1		ሻ	1≽		75	4		7	1	
Volume (veh/h)	20	20	8	46	28	66	7	195	49	22	250	21
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	178.7	190.0	190.0	175.6	190.0	182.7	171.1	190.0
Adj Flow Rate, veh/h	22	22	9	50	30	72	8	212	53	24	272	23
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	173	123	50	216	56	134	454	389	97	375	686	58
Arrive On Green	0.10	0.10	0.10	0.12	0.12	0.12	0.29	0.29	0.29	0.04	0.44	0.44
Sat Flow, veh/h	1810	1283	525	1810	467	1121	1101	1357	339	1740	1556	132
Grp Volume(v), veh/h	22	0	31	50	0	102	8	0	265	24	0	295
Grp Sat Flow(s),veh/h/ln	1810	0	1807	1810	0	1589	1101	0	1696	1740	0	1688
Q Serve(g_s), s	0.6	0.0	0.8	1.3	0.0	3.2	0.3	0.0	6.9	0.5	0.0	6.2
Cycle Q Clear(g_c), s	0.6	0.0	0.8	1.3	0.0	3.2	0.3	0.0	6.9	0.5	0.0	6.2
Prop In Lane	1.00		0.29	1.00		0.71	1.00		0.20	1.00		0.08
Lane Grp Cap(c), veh/h	173	0	173	216	0	189	454	0	487	375	0	744
V/C Ratio(X)	0.13	0.00	0.18	0.23	0.00	0.54	0.02	0.00	0.54	0.06	0.00	0.40
Avail Cap(c_a), veh/h	519	0	518	1038	0	911	875	0	1135	805	0	1807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	21.8	20.9	0.0	21.7	13.4	0.0	15.8	11.5	0.0	9.9
Incr Delay (d2), s/veh	0.5	0.0	0.7	0.8	0.0	3.4	0.0	0.0	1.4	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	0.7	0.0	1.6	0.1	0.0	3.4	0.2	0.0	3.0
LnGrp Delay(d),s/veh	22.1	0.0	22.5	21.6	0.0	25.0	13.4	0.0	17.1	11.5	0.0	10.4
LnGrp LOS	С		С	С		С	В		В	В		В
Approach Vol, veh/h		53			152			273			319	
Approach Delay, s/veh		22.3			23.9			17.0			10.5	
Approach LOS		С			С			В			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.0	8.1	21.0		12.2		29.1				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (g_c+l1), s		2.8	2.5	8.9		5.2		8.2				
Green Ext Time (p_c), s		0.1	0.0	5.5		1.0		6.2				
Intersection Summary												
HCM 2010 Ctrl Delay			16.1									
HCM 2010 LOS			В									

FASTC 2018 Base PM Int 11-18.syn
Cardno GS
Synchro 8 Light Report
Page 3

FASTC 2018 Base PM Int 11-18.syn
Cardno GS
Synchro 8 Light Report
Page 4

Intersection								
Int Delay, s/veh	1.9							
Movement		EBT	EBR		WBL	WBT	NBL	NBF
Vol, veh/h		54	8		5	44	20	
Conflicting Peds, #/hr		0	0		0	0	0	(
Sign Control		Free	Free		Free	Free	Stop	Stop
RT Channelized		-	None		-	None	-	None
Storage Length		-	100		247	-	0	
Veh in Median Storage, #		0	-		-	0	0	
Grade, %		0	-		-	0	0	
Peak Hour Factor		92	92		92	92	92	92
Heavy Vehicles, %		2	2		2	2	2	2
Mvmt Flow		59	9		5	48	22	A
Major/Minor	1	Major1		N	1ajor2		Minor1	
Conflicting Flow All		0	0		59	0	118	50
Stage 1		-	-		-	-	59	
Stage 2		-	-				59	
Critical Hdwy		-	-		4.12		6.42	6.22
Critical Hdwy Stg 1		-	-		-	-	5.42	
Critical Hdwy Stg 2		-	-		-		5.42	
Follow-up Hdwy		-	-		2.218		3.518	3.318
Pot Cap-1 Maneuver		-	-		1545	-	878	100
Stage 1		-	-		-		964	
Stage 2		-	-		-	-	964	
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-		1545	-	875	1007
Mov Cap-2 Maneuver		-	-		-	-	875	
Stage 1		-	-		-	-	964	
Stage 2		-	-		-		961	
Approach		EB			WB		NB	
HCM Control Delay, s		0			0.7		9.1	
HCM LOS					0.7		A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT			
Capacity (veh/h)	895	EDI	EDK -	1545	WDI			
HCM Lane V/C Ratio	0.029			0.004				
HCM Control Delay (s)	9.1			7.3				
HCM Control Delay (S)	9.1 A		-	7.3 A				

Int Delay, s/veh	0					
ilit Delay, siveri	U					
Movement	EBL	EBR	NBI	NBT	SBT	SBR
Vol, veh/h	1	3		2 0	0	0
Conflicting Peds, #/hr	0	0	(0 0	0	0
Sign Control	Stop	Stop	Free	e Free	Free	Free
RT Channelized	-	None		- None	-	None
Storage Length	0				-	-
Veh in Median Storage, #	0			- 0	0	-
Grade, %	0			- 0	0	-
Peak Hour Factor	92	92	9:	92	92	92
Heavy Vehicles, %	2	2	:	2 2	2	2
Mvmt Flow	1	3	:	2 0	0	0
Major/Minor	Minor2		Major'	1	Major2	
Conflicting Flow All	4	0		0		0
Stage 1	0	-			-	-
Stage 2	4	-				-
Critical Hdwy	6.42	6.22	4.13	2 -	-	
Critical Hdwy Stg 1	5.42	-				
Critical Hdwy Stg 2	5.42				-	
Follow-up Hdwy	3.518	3.318	2.21	3 -		
Pot Cap-1 Maneuver	1018				-	
Stage 1						_
Stage 2	1019				-	
Platoon blocked, %						
Mov Cap-1 Maneuver	1018				-	
Mov Cap-2 Maneuver	1018	-				
Stage 1	-				-	-
Stage 2	1019	-				-
3						
Approach	EB		NE	3	SB	
HCM Control Delay, s)	0	
HCM LOS						
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBF	?		
Capacity (veh/h)	_					
HCM Lane V/C Ratio						
HCM Control Delay (s)	-					
HCM Lane LOS						
HCM 95th %tile Q(veh)						

Intersection							
Int Delay, s/veh	4.7						
Movement	EBL	EB		NBL	NBT	SBT	SBR
Vol, veh/h	21		0	0	4	3	11
Conflicting Peds, #/hr	0		0	0	0	0	0
Sign Control	Stop	Sto		Free	Free	Free	Free
RT Channelized	-	Noi	ne	-	None	-	None
Storage Length	0		-	-	-	-	-
Veh in Median Storage, #	0		-	-	0	0	-
Grade, %	0		-	-	0	0	-
Peak Hour Factor	92		92	92	92	92	92
Heavy Vehicles, %	2		2	2	2	2	2
Mvmt Flow	23		0	0	4	3	12
Major/Minor	Minor2			Major1		Major2	
Conflicting Flow All	13		9	15	0	-	0
Stage 1	9			-		-	
Stage 2	4					-	
Critical Hdwy	6.42	6.3	22	4.12		-	-
Critical Hdwy Stg 1	5.42		-	-	-	-	-
Critical Hdwy Stg 2	5.42					-	-
Follow-up Hdwy	3.518	3.3	18	2.218			-
Pot Cap-1 Maneuver	1006	10	73	1603	-	-	-
Stage 1	1014			-		-	-
Stage 2	1019		-	-	-	-	-
Platoon blocked, %					-		-
Mov Cap-1 Maneuver	1006	10	13	1603	-	-	-
Mov Cap-2 Maneuver	1006			-	-		-
Stage 1	1014		-	-	-	-	-
Stage 2	1019		-	-	-	•	-
A	ED.			ND		SB	
Approach	EB 8.7			NB		0 2R	
HCM Control Delay, s				0		U	
HCM LOS	А						
Minor Lane/Major Mvmt	NBL	NBT EBL	n1 SBT	SBR			
Capacity (veh/h)	1603	- 10)6 -	-			
HCM Lane V/C Ratio	-	- 0.03	23 -				
HCM Control Delay (s)	0	- 8	.7 -				
HCM Lane LOS	A	-	Α -				
HCM 95th %tile Q(veh)	0	- 0	.1 -				

FASTC 2018 Base PM Int 11-18.syn Cardno GS

Base + A AM 10/1/2014

HCM 2010 TWSC 1: Cox Rd/Yellowbird Rd & US 460

Base + A AM 10/1/2014

Intersection											
Int Delay, s/veh	7.7										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBF
Vol, veh/h	1	150	33		386	97	2		17	7	144
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	(
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	Stor
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	125	-	50		100	-	100		-	-	
Veh in Median Storage, #	-	0	-			0	-			2	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	100	13	3		7	25	0		20	0	12
Mvmt Flow	1	163	36		420	105	2		18	8	157
Major/Minor	Major1			M	lajor2				Minor1		
	105	0	0	IV	163	0	0		1072	1110	82
Conflicting Flow All	105	-	-		103	0	-		165	165	84
Stage 1							-		907	945	
Stage 2	- / 1	-	-		4.24		-		7.9		7.1
Critical Hdwy	6.1	-	-		4.24	-	-		6.9	6.5 5.5	7.14
Critical Hdwy Stg 1		-	-			-	-		6.9	5.5	
Critical Hdwy Stg 2 Follow-up Hdwy	3.2	-	-		2.27	-	-		3.7	3.5	3.42
Pot Cap-1 Maneuver	986				1377				153	211	930
Stage 1	700	-	-		13//		-		771	766	930
Stage 2									263	343	
Platoon blocked, %	-								203	343	
Mov Cap-1 Maneuver	986				1377				104	146	930
Mov Cap-1 Maneuver	700				13//	-			149	223	730
Stage 1									770	765	
Stage 2	-	-	-		-	-	-		158	238	
Approach	EB				WB				NB		
HCM Control Delay, s	0				7				14.5		
HCM LOS									В		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	559	986	-		1377	-	-	265			
HCM Lane V/C Ratio	0.327	0.001			0.305		-	0.176			
HCM Control Delay (s)	14.5	8.7	-	-	8.8		-	21.5			
HCM Lane LOS	R	Δ			Δ			C			

В

1.4

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	5	27	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	2	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	4	9
Mvmt Flow	5	29	12
Major/Minor	Minor2		
Conflicting Flow All	1033	1110	53
Stage 1	945	945	-
Stage 2	88	165	-
Critical Hdwy	7.5	6.58	7.08
Critical Hdwy Stg 1	6.5	5.58	-
Critical Hdwy Stg 2	6.5	5.58	-
Follow-up Hdwy	3.5	4.04	3.39
Pot Cap-1 Maneuver	189	205	981
Stage 1	285	334	-
Stage 2	916	756	-
Platoon blocked, %			
Mov Cap-1 Maneuver	117	142	981
Mov Cap-2 Maneuver	230	209	-
Stage 1	285	232	
Stage 2	753	755	-
-			
Approach	SB		
Approach	SB		
HCM Control Delay, s	21.5		
HCM Control Delay, s			
	21.5		

FASTC 2018 Base + A AM Int 1-10.syn Cardno GS

HCM Lane LOS

HCM 95th %tile Q(veh)

Synchro 8 Light Report Page 1

С

0.6

FASTC 2018 Base + A AM Int 1-10.syn Cardno GS

Intersection								
Int Delay, s/veh	5.9							
,								
Movement		EBT	EBR		WBL	WBT	NBL	NBR
Vol, veh/h		83	2		341	104	1	85
Conflicting Peds, #/hr		0	0		0	0	0	0
Sign Control		Free	Free		Free	Free	Stop	Stop
RT Channelized		-	None		-	None		None
Storage Length		-	-		-	-	0	-
Veh in Median Storage, #		0	-		-	0	0	-
Grade, %		0	-		-	0	0	-
Peak Hour Factor		92	92		92	92	92	92
Heavy Vehicles, %		6	0		3	14	0	24
Mvmt Flow		90	2		371	113	1	92
Major/Minor		Major1			Major2		Minor1	
Conflicting Flow All		0	0		92	0	945	91
Stage 1		-			-		91	-
Stage 2		-	-		-	-	854	_
Critical Hdwy		-	-		4.13		6.4	6.44
Critical Hdwy Stg 1		-	-		-		5.4	-
Critical Hdwy Stg 2		-	-		-		5.4	-
Follow-up Hdwy		-	-		2.227	-	3.5	3.516
Pot Cap-1 Maneuver		-	-		1496	-	293	909
Stage 1		-	-		-	-	938	-
Stage 2		-	-		-	-	421	-
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-		1496	-	215	909
Mov Cap-2 Maneuver		-	-		-	-	215	-
Stage 1		-	-		-	-	938	-
Stage 2		-	-		-	-	309	-
Approach		EB			WB		NB	
HCM Control Delay, s		0			6.3		9.6	
HCM LOS							A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT			
Capacity (veh/h)	876	-	-	1496	-			
HCM Lane V/C Ratio	0.107	-	-	0.248	-			
HCM Control Delay (s)	9.6	-	-	8.2	0			
HCM Lane LOS	Α	-	-	Α	Α			
HCM 95th %tile Q(veh)	0.4	-	-	1	-			

Intersection											
Int Delay, s/veh	9.3										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBR
Vol, veh/h	9	41	134		21	19	8		8	68	2
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	50		-	-	-		150	-	25
Veh in Median Storage, #	-	0	-		-	0	-		-	0	-
Grade, %	-	0	-		-	0	-		-	0	-
Peak Hour Factor	92	92	92		95	95	95		92	92	92
Heavy Vehicles, %	0	18	1		1	11	63		9	21	12
Mvmt Flow	10	45	146		22	20	8		9	74	2
Major/Minor	Major1				Major2				Minor1		
Conflicting Flow All	28	0	0		45	0	0		312	137	45
Stage 1	-	-	-		-	-	-		64	64	-
Stage 2	-	-	-		-	-	-		248	73	-
Critical Hdwy	4.1	-	-		4.11	-	-		7.19	6.71	6.32
Critical Hdwy Stg 1	-	-	-		-	-	-		6.19	5.71	-
Critical Hdwy Stg 2	-	-	-		-	-	-		6.19	5.71	-
Follow-up Hdwy	2.2	-	-		2.209	-	-		3.581	4.189	3.408
Pot Cap-1 Maneuver	1599	-	-		1570	-	-		627	720	997
Stage 1	-	-	-		-	-	-		930	806	-
Stage 2	-	-	-		-	-	-		741	798	-
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1599	-	-		1570	-	-		384	705	997
Mov Cap-2 Maneuver	-	-	-		-	-	-		384	705	-
Stage 1	-	-	-		-	-	-		923	800	-
Stage 2	-	-	-		-	-	-		414	787	-
Approach	EB				WB				NB		
HCM Control Delay, s	0.4				3.2				11		
HCM LOS									В		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	384	705	997	1599	-	-	1570	-	-	742	
HCM Lane V/C Ratio	0.023	0.105	0.002	0.006	-	-	0.014		-	0.501	
HCM Control Delay (s)	14.6	10.7	8.6	7.3	0	-	7.3	0	-	14.6	
HCM Lane LOS	В	В	Α.	Α.	A	-	Α.	A	-	В	
HCM 95th %tile Q(veh)	0.1	0.4	0	0	-	-	0	-	-	2.8	

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	11	326	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #		0	-
Grade, %		0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	18	3	0
Mvmt Flow	12	354	5
Major/Minor	Minor2		
Conflicting Flow All	169	132	24
Stage 1	68	68	- 24
	101	64	
Stage 2	7.28	6.53	6.2
Critical Hdwy	6.28	5.53	0.2
Critical Hdwy Stg 1	6.28	5.53	
Critical Hdwy Stg 2			3.3
Follow-up Hdwy	3.662	4.027	
Pot Cap-1 Maneuver	760	757	1058
Stage 1	904	836	-
Stage 2	867	840	-
Platoon blocked, %			
Mov Cap-1 Maneuver	687	741	1058
Mov Cap-2 Maneuver	687	741	-
Stage 1	898	824	-
Stage 2	780	834	-
Approach	SB		
HCM Control Delay, s	14.6		
HCM LOS	В		

Int Delay, s/veh	4.9										
in boldy, siven	1.7										
Movement	EBL	EBT	EBR		WBL	WBT	WBR	N	IBL	NBT	NBR
Vol, veh/h	0	0	0		11	0	58		0	93	39
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	F	ree	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	-		-	-	-		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	-
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	0	0	0		0	0	31		0	9	6
Mvmt Flow	0	0	0		12	0	63		0	101	42
Major/Minor	Minor2				Minor1			Maj			
Conflicting Flow All	758	747	113		726	726	122		113	0	0
Stage 1	604	604	-		122	122	-		-	-	-
Stage 2	154	143	-		604	604	-		-	-	-
Critical Hdwy	7.1	6.5	6.2		7.1	6.5	6.51		4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-		6.1	5.5	-		-	-	-
Critical Hdwy Stg 2	6.1	5.5	-		6.1	5.5	-		-	-	-
Follow-up Hdwy	3.5	4	3.3		3.5	4	3.579		2.2	-	
Pot Cap-1 Maneuver	326	344	945		343	354	857	14	189	-	-
Stage 1	489	491	-		887	799	-		-	-	
Stage 2	853	782	-		489	491	-		-	-	-
Platoon blocked, %										-	
Mov Cap-1 Maneuver	260	281	945		295	290	857	14	189	-	-
Mov Cap-2 Maneuver	260	281	-		295	290	-		-	-	
Stage 1	489	402	-		887	799	-		-	-	-
Stage 2	790	782			400	402	-		-	-	-
Approach	EB				WB				NB		
HCM Control Delay, s	0				11.2				0		
HCM LOS	А				В						
M	NDI	NDT	NDD	EDI 4	WDL 4	CDI	CDT	CDD			
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1489	-	-	-	657	1440	-	-			
HCM Lane V/C Ratio	-	-	-	-	0.114	0.171	-	-			
HCM Control Delay (s)	0	-	-	0	11.2	8	0	-			
HCM Lane LOS	A	-	-	Α	В	Α	А				
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.6	-	-			

Minor Lane/Major Mvmt

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	226	104	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length		-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	4	0
Mymt Flow	246	113	0
Major/Minor	Maio-2		
Major/Minor	Major2		
Conflicting Flow All	143	0	0
Stage 1	-	-	-
Stage 2		-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2		-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1440	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1440	-	-
Mov Cap-2 Maneuver	-	-	-
	-	-	-
Stage 1			
Stage 1 Stage 2	-	-	
	-	-	
Stage 2			
Stage 2 Approach	SB		
Stage 2			

Vol, veh/h 107 62 Conflicting Peds, #/hr 0 0 Sign Control Stop Stop RT Channelized - None Storage Length 0 - Veh in Median Storage, # 0 - Grade, % 0 - Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mymt Flow 116 67 Major/Minor Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 1 119 - Stage 1 119 - Stage 2 48 - Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % 8				
Vol, veh/h 107 62 Conflicting Peds, #/hr 0 0 Sign Control Stop Stop RT Channelized - None Storage Length 0 - Veh in Median Storage, # 0 - Grade, % 0 - Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mmrt Flow 116 67 Major/Minor Minor Minor Major/Minor Minor Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Critical Hdwy Stg 2 5.42 - Critical Hdwy Stg 3 3.337 930 Stage 1 906 - Stage 2 974 - Platonon blocked, % <				
Conflicting Peds, #/hr 0 0 Sign Control Stop Stop RT Channelized - None Storage Length 0 - Oveh in Median Storage, # 0 - Grade, % 0 - Peak Hour Factor 92 92 Peak Hour Factor 92 92 Meavy Vehicles, % 2 3 Mmrt Flow 116 67 Minor Conflicting Flow All 167 119 Stage 1 119 - Stage 1 119 - Stage 2 48 - Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-2 Maneuver 816 930 <td< th=""><th>NBL</th><th>NBT</th><th>SBT</th><th>SBR</th></td<>	NBL	NBT	SBT	SBR
Sign Control Stop Stop RT Channelized - None Storage Length 0 - Veh in Median Storage, # 0 - Grade, % 0 - Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mmmt Flow 116 67 Major/Minor Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - Stage 1 906	10	24	104	11
RT Channelized - None Storage Length 0 - Veh in Median Storage, # 0 - Grade, % 0 - Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mymt Flow 116 67 Major/Minor Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-2 Maneuver 816 930 Mov Cap-2 Maneuver 816 - - Stage 1 906 - - Stage 2 966 - <td>0</td> <td>0</td> <td>0</td> <td>0</td>	0	0	0	0
Storage Length 0 - Veh in Median Storage, # 0 - Grade, % 0 - Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mvmt Flow 116 67 Major/Minor Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % 900 - Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - Stage 2 966 - Stage 2 966 -	Free	Free	Free	Free
Veh in Median Storage, # 0 - Grade, % 0 - Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mvmt Flow 116 67 Major/Minor Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - - Stage 1 906 - - Stage 2 966 - - Approach EB - H	-	None	-	None
Grade, % 0 - Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mvmt Flow 116 67 Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Critical Hdwy Stg 3 9.30 3.327 Pollow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - - Stage 1 906 - - Stage 2 966 - - Approach EB - HCM Control Delay, s 10.4	-		•	-
Peak Hour Factor 92 92 Heavy Vehicles, % 2 3 Mmmt Flow 116 67 Major/Minor Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Polt Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - - Stage 1 906 - - Stage 2 966 - - Approach EB - HCM Control Delay, s 10.4 - HCM Los B - Minor Lane/Major Mvmt NBL <td>-</td> <td>0</td> <td>0</td> <td>-</td>	-	0	0	-
Heavy Vehicles, % 2 3 3 Mvmt Flow 116 67 67	-	0	0	-
Mymnt Flow 116 67 Major/Minor Minor2 Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - 30 Mov Cap-2 Maneuver 816 - - Stage 1 906 - - Stage 2 966 - - Approach EB - HCM Control Delay, s 10.4 - HCM Los B - Minor Lane/Major Mvmt NBL NBT EBH	92	92	92	92
Major/Minor	12	19	4	0
Conflicting Flow All 167 119	11	26	113	12
Conflicting Flow All 167 119 Stage 1 119 - Stage 2 48 - Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Stage 2 930 Stage 1 930 - Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - Stage 1 906 - Stage 1 906 - Stage 2 966 - Stage 2 966 - Mproach EB HCM Control Delay, s 10.4 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	Major1		Major2	
Stage 1	125	0	-	0
Stage 2	-	-	-	
Critical Hdwy 6.42 6.23 Critical Hdwy Stg 1 5.42 - Critical Hdwy Stg 2 5.42 - Critical Hdwy Stg 2 5.42 - Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Wov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - 30 Stage 1 906 - - Stage 2 966 - - Approach EB - HCM Control Delay, s 10.4 - HCM LOS B - Minor Lane/Major Mwnt NBL NBT EBL Minor Lane/Major Mynt 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	-			-
Critical Hdwy Stg 1 5.42 Critical Hdwy Stg 2 5.42 Critical Hdwy Stg 2 5.42 Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 Stage 1 906 Stage 2 974 Platoon blocked, % Mov Cap-1 Maneuver 816 Mov Cap-2 Maneuver 816 Stage 1 906 Stage 2 966 - Approach EB HCM Control Delay, s 10.4 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBL1 Capacity (veh/h) 1402 854 HCM Lane V/C Ratio 0.008 0.215	4.22	-	-	
Critical Hdwy Stg 2 5.42 Follow-up Hdwy 3.518 930 3.327 Pot Cap-1 Maneuver 823 Stage 1 906 Stage 2 974 Platoon blocked, % - Mov Cap-1 Maneuver 816 Stage 1 906 Stage 2 966 - - Stage 2 966 - - Approach EB HCM Control Delay, s 10.4 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBL1 Capacity (veh/h) 1402 854 HCM Lane V/C Ratio 0.008 0.215	-			-
Follow-up Hdwy 3.518 3.327 Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - Stage 1 906 - Mov Cap-2 Maneuver 816 - Stage 1 906 - Stage 1 906 - Maneuver 816 - Stage 1 906 - Maneuver 816 - Stage 1 906 - Stage 2 966 - Minor Lane/Major Mwmt NBL NBT EBLn1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215				-
Pot Cap-1 Maneuver 823 930 Stage 1 906 - Stage 2 974 - Platoon blocked, % Wov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - - Stage 1 906 - - Stage 2 966 - - Approach EB - - HCM Control Delay, s 10.4 - - HCM LOS B - - Minor Lane/Major Mvmt NBL NBT EBL1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	2.308			
Stage 1 906 - Stage 2 974 - Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-2 Maneuver 816 - Stage 1 906 - Stage 2 966 - Approach EB HCM Control Delay, s 10.4 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	1402			
Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-1 Maneuver 816 - Mov Cap-2 Maneuver 816 - Stage 1 906 - Stage 2 966 - Approach EB - HCM Control Delay, s 10.4 - HCM LOS B - Minor Lane/Major Mwmt NBL NBT EBL1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215				
Platoon blocked, % Mov Cap-1 Maneuver 816 930 Mov Cap-1 Maneuver 816 - Mov Cap-2 Maneuver 816 - Stage 1 906 - Stage 2 966 - Approach EB - HCM Control Delay, s 10.4 - HCM LOS B - Minor Lane/Major Mwmt NBL NBT EBL1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215				
Mov Cap-2 Maneuver 816 - Stage 1 906 - Stage 2 966 - Approach EB B HCM Control Delay, s 10.4 HCM LOS B B B Minor Lane/Major Mvmt NBL NBT EBL1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215				-
Mov Cap-2 Maneuver 816 - Stage 1 906 - Stage 2 966 - Approach EB B HCM Control Delay, s 10.4 HCM LOS B B Minor Lane/Major Mvmt NBL NBT EBL1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	1402			-
Stage 1 906 - Stage 2 966 - Approach EB - HCM Control Delay, s 10.4 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215				-
Approach EB HCM Control Delay, s 10.4 HCM LOS B Minor Lane/Major Mvmt NBL NBT EBLn1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	-	-	-	-
HCM Control Delay, s	-	-	-	-
HCM Control Delay, s	NB		SB	
Minor Lane/Major Mvmt NBL NBT EBLn1 Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	2.2		0	
Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	2.2		, and the second	
Capacity (veh/h) 1402 - 854 HCM Lane V/C Ratio 0.008 - 0.215	SBT SBR			
HCM Lane V/C Ratio 0.008 - 0.215				
HCM Lane LOS A A B				
HCM 95th %tile Q(veh) 0 - 0.8				

Intersection			
Int Delay, s/veh			
in belay, siven			
Movement	SBL	SBT	SBR
Vol, veh/h	1	1	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	26
Mymt Flow	1	1	7
WINTER FROM			
Major/Minor	Minor2		
Conflicting Flow All	158	169	14
Stage 1	16	16	-
Stage 2	142	153	-
Critical Hdwy	7.1	6.5	6.46
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.534
Pot Cap-1 Maneuver	813	728	1000
Stage 1	1009	886	-
Stage 2	866	775	
Platoon blocked, %	000	113	
Mov Cap-1 Maneuver	812	727	1000
Mov Cap-1 Maneuver	812	727	1000
	1008	885	
Stage 1	865	774	
Stage 2	800	114	-
Approach	SB		
HCM Control Delay, s	8.9		
HCM LOS	A		
110111 200			

9.8

0

7.3

0

7.5

0

8.9

HCM Control Delay (s)

HCM Lane LOS HCM 95th %tile Q(veh)

Intersection											
Int Delay, s/veh	0.4										
Movement	EBL	EBT	EBR	WB	L	WBT	WBR		NBL	NBT	NBR
Vol, veh/h	1	108	10		0	9	0		4	0	(
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	(
Sign Control	Free	Free	Free	Fre	е	Free	Free		Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	-		-	-	-		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92	9	2	92	92		92	92	92
Heavy Vehicles, %	5	3	1		0	22	0		1	0	0
Mvmt Flow	1	117	11		0	10	0		4	0	0
Major/Minor	Major1			Major	2				Minor1		
Conflicting Flow All	10	0	0	12		0	0		135	135	123
Stage 1	-				-	-			125	125	
Stage 2	-		-		-				10	10	
Critical Hdwy	4.15			4.	1	-	-		7.11	6.5	6.2
Critical Hdwy Stg 1	-	-	-		-	-	-		6.11	5.5	
Critical Hdwy Stg 2	-	-			-	-	-		6.11	5.5	
Follow-up Hdwy	2.245	-		2.	2	-	-		3.509	4	3.3
Pot Cap-1 Maneuver	1590	-	-	147	0	-	-		839	760	933
Stage 1	-	-			-	-	-		881	796	
Stage 2	-	-	-		-	-	-		1014	891	
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1590	-	-	147	0	-	-		837	759	933
Mov Cap-2 Maneuver	-	-	-		-	-	-		837	759	-
Stage 1	-	-	-		-	-	-		880	795	-
Stage 2	-	-	-		-	-	-		1013	891	
Approach	EB			W	В				NB		
HCM Control Delay, s	0.1				0				9.3		
HCM LOS	0.1								A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WB	1	WBT	WBR	SBLn1			
Capacity (veh/h)	837	1590	EDI -	- 147		WDI -	WDK	1005			
HCM Lane V/C Ratio	0.005	0.001	-	- 147	U	-		0.001			
HCM Control Delay (s)	9.3	7.3	0	:	0	-		8.6			
HCM Land LOS	9.3 A	7.5	Δ		٨	-	-	ο.ο			

Intersection			
Int Delay, s/veh			
= 0.03/, 0.10			
Movement	SBI	SBT	SBR
Vol, veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	26
Mymt Flow	0	0	1
11.1. /11.	14. 0		
Major/Minor	Minor2		
Conflicting Flow All	135	140	10
Stage 1	10	10	-
Stage 2	125	130	-
Critical Hdwy	7.1	6.5	6.46
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.534
Pot Cap-1 Maneuver	841	755	1005
Stage 1	1016	891	
Stage 2	884	792	
Platoon blocked, %	004	172	
Mov Cap-1 Maneuver	840	754	1005
Mov Cap-1 Maneuver	840	754	1005
Stage 1	1015	891	-
	883	791	
Stage 2	003	791	-
Approach	SB		
HCM Control Delay, s	8.6		
HCM LOS	A		
110111 200	7.		

HCM Lane LOS HCM 95th %tile Q(veh) Minor Lane/Major Mvmt

HCM 95th %tile Q(veh)

Int Delay, s/veh	6.5									
ini belay, siven	0.5									
Movement	EBL	EBT	EBR		WBL	WBT	WBR	NBI	NBT	NBI
Vol, veh/h	16	0	4		0	0	0	3	3 0	
Conflicting Peds, #/hr	0	0	0		0	0	0	(0	
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Free	Free	Fre
RT Channelized	-	-	None			-	None			Non
Storage Length	-	-	-		-	-	-			
Veh in Median Storage, #	-	0	-		-	0	-		. 0	
Grade, %	-	0	-		-	0	-		. 0	
Peak Hour Factor	92	92	92		92	92	92	92	92	9
Heavy Vehicles, %	0	5	0		0	26	26	(0	
Mvmt Flow	17	0	4		0	0	0	3	0	
Major/Minor	Minor2				Minor1			Major1		
Conflicting Flow All	11	12	4		13	14	1	7	0	
Stage 1	4	4	-		7	7	-			
Stage 2	7	8	-		6	7	-			
Critical Hdwy	7.1	6.55	6.2		7.1	6.76	6.46	4.1	-	
Critical Hdwy Stg 1	6.1	5.55	-		6.1	5.76	-			
Critical Hdwy Stg 2	6.1	5.55	-		6.1	5.76	-			
Follow-up Hdwy	3.5	4.045	3.3		3.5	4.234	3.534	2.2		
Pot Cap-1 Maneuver	1012	877	1085		1009	835	1017	1627		
Stage 1	1024	887	-		1020	844	-			
Stage 2	1020	883	-		1021	844	-			
Platoon blocked, %									-	
Mov Cap-1 Maneuver	1010	875	1085		1003	833	1017	1627	-	
Mov Cap-2 Maneuver	1010	875	-		1003	833	-			
Stage 1	1022	887	-		1018	842	-			
Stage 2	1018	881	-		1017	844	-		-	
Approach	EB				WB			NE		
HCM Control Delay, s	8.6				0			5.4		
HCM LOS	А				А					
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1627	IND I	NDIX	1024	WDLIII	1602	JD1 -	-		
HCM Lane V/C Ratio	0.002	-	-	0.021	-	1002	-	-		
HCM Control Delay (s)	7.2	0		8.6	0	0		-		
HCM Control Delay (S) HCM Lane LOS	7.2 A	A	-	8.6 A	A	A	-	-		
acivi raile ros	A	A	-	A	A	A	-	-		

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	0	1	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	0	0
Mvmt Flow	0	1	5
Major/Minor	Major2		
Conflicting Flow All	1	0	0
Stage 1		-	-
Stage 2		-	-
Critical Hdwy	4.15		
Critical Hdwy Stg 1	7.13	-	-
Critical Hdwy Stg 2	-		
Follow-up Hdwy	2,245		-
Pot Cap-1 Maneuver	1602		
Stage 1	-		-
Stage 2	-		
Platoon blocked, %			
Mov Cap-1 Maneuver	1602		-
Mov Cap-2 Maneuver	-		
Stage 1	-		
Stage 2	-	-	-
3.			
A	CD		
Approach	SB		
HCM Control Delay, s	0		
HCM LOS			
Minor Lane/Major Mvmt			

FASTC 2018 Base + A AM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 13

- - 0.1

0

FASTC 2018 Base + A AM Int 1-10.syn Cardno GS

Intersection									
Int Delay, s/veh	0.2								
Movement	EBL	EBT				WBT	WBR	SBL	SBR
Vol, veh/h	3	223				69	5	2	2
Conflicting Peds, #/hr	0	0				0	0	0	0
Sign Control	Free	Free				Free	Free	Stop	Stop
RT Channelized	-	None				-	None	-	None
Storage Length	-	-				-	-	0	
Veh in Median Storage, #	-	0				0	-	0	
Grade, %	-	0				0	-	0	
Peak Hour Factor	92	92				92	92	92	92
Heavy Vehicles, %	67	3				21	12	4	0
Mvmt Flow	3	242				75	5	2	2
Major/Minor	Major1					Major2		Minor2	
Conflicting Flow All	80	0				iviajoi z	0	327	78
Stage 1	-	-				-	-	78	76
Stage 2							-	249	
Critical Hdwy	4.77	-				-	-	6.44	6.2
Critical Hdwy Stg 1	4.77	-				-		5.44	0.2
Critical Hdwy Stg 2								5.44	
Follow-up Hdwy	2.803					-		3.536	3.3
Pot Cap-1 Maneuver	1192							663	988
	1192	-						940	
Stage 1		-				-	-	788	
Stage 2 Platoon blocked, %	-	-				-		788	
	1192	-				-		661	988
Mov Cap-1 Maneuver		-				-	-		988
Mov Cap-2 Maneuver	-	-				-	-	661	
Stage 1	-	-				-	-	940	
Stage 2	•	-				-		786	
Approach	EB					WB		SB	
HCM Control Delay, s	0.1					0		9.6	
HCM LOS								A	
	EDI	EDT	WDT	WDD	CDL 4				
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1				
Capacity (veh/h)	1192	-	-	-	792				
HCM Lane V/C Ratio	0.003	-	-	-	0.005				
HCM Control Delay (s)	8	0	-	-	9.6				
HCM Lane LOS	Α	Α	-	-	Α				
HCM 95th %tile Q(veh)	0	-	-	-	0				

FASTC 2018 Base + A AM Int 1-10.syn Cardno GS

10: S. Main St & 8th St/W Entrance Rd

Base + A AM 10/22/2014

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Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	9	2	18	34	3	331	97	155	
v/c Ratio	0.05	0.01	0.09	0.06	0.01	0.62	0.22	0.20	
Control Delay	28.4	0.0	28.4	0.3	15.7	23.2	9.2	9.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.4	0.0	28.4	0.3	15.7	23.2	9.2	9.1	
Queue Length 50th (ft)	3	0	6	0	1	95	17	28	
Queue Length 95th (ft)	17	0	25	2	6	184	39	59	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	329	400	769	605	976	1327	493	1565	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.01	0.02	0.06	0.00	0.25	0.20	0.10	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 10: S. Main St & 8th St/W Entrance Rd

Base + A AM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	7		र्स	7	, N	1>		7	4	
Volume (veh/h)	1	7	2	16	1	31	3	198	107	89	142	1
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	184.8	168.1	190.0	178.7	190.0	184.5	162.5	190.0
Adj Flow Rate, veh/h	1	8	2	17	1	34	3	215	116	97	154	1
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	13	0	7	7	3	17	17
Cap, veh/h	20	159	153	158	9	238	492	311	168	375	758	5
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.28	0.28	0.28	0.07	0.47	0.47
Sat Flow, veh/h	210	1680	1615	1666	98	1429	1251	1093	590	1757	1613	10
Grp Volume(v), veh/h	9	0	2	18	0	34	3	0	331	97	0	155
Grp Sat Flow(s), veh/h/ln	1890	0	1615	1764	0	1429	1251	0	1683	1757	0	1624
Q Serve(q s), s	0.2	0.0	0.1	0.5	0.0	1.1	0.1	0.0	9.3	1.9	0.0	3.0
Cycle Q Clear(q_c), s	0.2	0.0	0.1	0.5	0.0	1.1	0.1	0.0	9.3	1.9	0.0	3.0
Prop In Lane	0.11		1.00	0.94		1.00	1.00		0.35	1.00		0.01
Lane Grp Cap(c), veh/h	179	0	153	167	0	238	492	0	478	375	0	763
V/C Ratio(X)	0.05	0.00	0.01	0.11	0.00	0.14	0.01	0.00	0.69	0.26	0.00	0.20
Avail Cap(c_a), veh/h	358	0	306	835	0	779	1203	0	1435	582	0	1876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	21.7	21.9	0.0	18.8	13.6	0.0	16.8	11.6	0.0	8.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.3	0.0	0.0	1.8	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.3	0.0	0.4	0.0	0.0	4.5	0.9	0.0	1.3
LnGrp Delay(d),s/veh	21.9	0.0	21.7	22.1	0.0	19.1	13.6	0.0	18.6	11.9	0.0	8.3
LnGrp LOS	С		С	С		В	В		В	В		А
Approach Vol, veh/h		11			52			334			252	
Approach Delay, s/veh		21.8			20.1			18.6			9.7	
Approach LOS		C			C			В			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.0	9.8	21.0		11.0		30.8				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (q_c+l1), s		3.1	3.9	11.3		2.2		5.0				
Green Ext Time (p_c), s		0.1	0.1	3.5		0.0		3.7				
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			B									

FASTC 2018 Base + A AM Int 11-18.syn Cardno GS

Base + A AM 10/22/2014

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	10	104	98	134	133	22
v/c Ratio	0.03	0.21	0.12	0.08	0.18	0.03
Control Delay	13.0	3.1	2.6	2.0	11.1	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	3.1	2.6	2.0	11.1	6.4
Queue Length 50th (ft)	1	0	0	0	13	0
Queue Length 95th (ft)	12	16	23	29	66	13
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1306	839	1042	1727	1628	1578
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.12	0.09	0.08	0.08	0.01
Intersection Summary						

HCM 2010 Signalized Intersection Summary 11: S. Main St & Church St

Base + A AM 10/22/2014

	<u> </u>	``	•	1	ļ	1
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T T	EDIX	NDL	ND1	JD1 ↑	JUK *
Volume (veh/h)	9	96	90	123	122	20
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	171.2	172.7	179.2	172.7	166.7	190.0
Adj Flow Rate, veh/h	10	104	98	134	133	22
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	11	10	6	10	14	0.72
Cap, veh/h	219	327	588	898	432	419
Arrive On Green	0.13	0.13	0.09	0.52	0.26	0.26
	1630	1468	1707	1727	1667	1615
Sat Flow, veh/h						
Grp Volume(v), veh/h	10	104	98	134	133	22
Grp Sat Flow(s),veh/h/ln	1630	1468	1707	1727	1667	1615
Q Serve(g_s), s	0.2	2.1	1.3	1.4	2.2	0.4
Cycle Q Clear(g_c), s	0.2	2.1	1.3	1.4	2.2	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	219	327	588	898	432	419
V/C Ratio(X)	0.05	0.32	0.17	0.15	0.31	0.05
Avail Cap(c_a), veh/h	1174	1186	1175	3034	1920	1860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	11.3	6.8	4.3	10.4	9.7
Incr Delay (d2), s/veh	0.1	0.7	0.1	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.8	0.6	0.7	1.0	0.2
LnGrp Delay(d),s/veh	13.2	12.0	6.9	4.4	10.5	9.7
LnGrp LOS	13.2 B	12.0 B	Α.	Α.	В	Α.
Approach Vol. veh/h	114	ט	А	232	155	r
				5.5	10.4	
Approach Delay, s/veh	12.1 B					
Approach LOS	В			Α	В	
Timer	1	2	3	4	5	6
Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		24.1		10.7	9.1	15.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		61.0		25.0	15.0	40.0
Max Q Clear Time (q_c+I1), s		3.4		4.1	3.3	4.2
Green Ext Time (p_c), s		1.2		0.4	0.2	1.1
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Intersection Summary						
HCM 2010 Ctrl Delay HCM 2010 LOS			8.5 A			

Synchro 8 Light Report Page 1

FASTC 2018 Base + A AM Int 11-18.syn Cardno GS

Queues 12: N. Main St & Dinwiddie Ave Base + A AM 10/22/2014

	•	-	•	←	†	-	↓
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	8	19	20	32	144	108	147
v/c Ratio	0.02	0.05	0.05	0.09	0.32	0.23	0.20
Control Delay	26.4	26.1	25.2	13.0	23.7	13.7	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	26.1	25.2	13.0	23.7	13.7	13.0
Queue Length 50th (ft)	3	7	7	2	49	29	39
Queue Length 95th (ft)	15	25	25	24	101	58	74
Internal Link Dist (ft)		598		847	888		606
Turn Bay Length (ft)	100		150			100	
Base Capacity (vph)	474	496	949	824	1039	611	1468
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.04	0.02	0.04	0.14	0.18	0.10
Intersection Summary							

HCM 2010 Signalized Intersection Summary 12: N. Main St & Dinwiddie Ave

Base + A AM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1		7	1>		*	1		Ĭ,	1	
Volume (veh/h)	7	17	1	18	5	25	0	99	33	99	124	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	176.6	190.0	190.0	175.1	190.0	182.7	171.1	190.0
Adj Flow Rate, veh/h	8	18	1	20	5	27	0	108	36	108	135	12
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	312	308	17	222	29	159	113	296	99	474	655	58
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.00	0.24	0.24	0.09	0.42	0.42
Sat Flow, veh/h	1810	1783	99	1810	240	1297	1260	1258	419	1740	1549	138
Grp Volume(v), veh/h	8	0	19	20	0	32	0	0	144	108	0	147
Grp Sat Flow(s),veh/h/ln	1810	0	1883	1810	0	1537	1260	0	1677	1740	0	1687
Q Serve(g_s), s	0.2	0.0	0.5	0.6	0.0	1.2	0.0	0.0	4.6	2.7	0.0	3.5
Cycle Q Clear(g_c), s	0.2	0.0	0.5	0.6	0.0	1.2	0.0	0.0	4.6	2.7	0.0	3.5
Prop In Lane	1.00		0.05	1.00		0.84	1.00		0.25	1.00		0.08
Lane Grp Cap(c), veh/h	312	0	325	222	0	189	113	0	394	474	0	713
V/C Ratio(X)	0.03	0.00	0.06	0.09	0.00	0.17	0.00	0.00	0.37	0.23	0.00	0.21
Avail Cap(c_a), veh/h	425	0	443	851	0	723	508	0	920	720	0	1481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	22.1	24.8	0.0	25.1	0.0	0.0	20.4	14.3	0.0	11.6
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.2	0.0	0.6	0.0	0.0	0.8	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.3	0.3	0.0	0.5	0.0	0.0	2.2	1.3	0.0	1.7
LnGrp Delay(d),s/veh	22.0	0.0	22.2	25.1	0.0	25.7	0.0	0.0	21.2	14.5	0.0	11.8
LnGrp LOS	С		С	С		С			С	В		В
Approach Vol, veh/h		27			52			144			255	
Approach Delay, s/veh		22.1			25.4			21.2			13.0	
Approach LOS		С			С			С			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		17.0	12.0	21.0		13.8		33.0				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (g_c+l1), s		2.5	4.7	6.6		3.2		5.5				
Green Ext Time (p_c), s		0.1	0.1	2.6		0.3		2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			17.3									
HCM 2010 LOS			В									

FASTC 2018 Base + A AM Int 11-18.syn Cardno GS Synchro 8 Light Report Page 3 FASTC 2018 Base + A AM Int 11-18.syn Cardno GS

Synchro 8 Light Report

Page 1

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	168	54	0	0	0
Conflicting Peds, #/hr	0	0	0		0	0
Sign Control	Stop	Stop	Free		Free	Free
RT Channelized		None	-			None
Storage Length	0	-		-	-	-
Veh in Median Storage, #	0	-		0	0	
Grade, %	0			0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	0	183	59	0	0	0
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	117	0	0	0	-	0
Stage 1	0	-				
Stage 2	117				_	
Critical Hdwy	6.42	6.22	4.12			
Critical Hdwy Stg 1	5.42	-	-		-	
Critical Hdwy Stg 2	5.42					
Follow-up Hdwy	3.518	3.318	2.218		-	
Pot Cap-1 Maneuver	879	-				
Stage 1	-				_	
Stage 2	908					
Platoon blocked, %					-	
Mov Cap-1 Maneuver	879					
Mov Cap-2 Maneuver	879				-	
Stage 1	-					
Stage 2	908	-		-	-	
3						
Approach	EB		NB		SB	
HCM Control Delay, s			0		0	
HCM LOS	-					
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	-					
HCM Lane V/C Ratio						
HCM Control Delay (s)	-					
HCM Lane LOS	-					
HCM 95th %tile Q(veh)						

Base + A AM 10/1/2014

Intersection						
Int Delay, s/veh	2.5					
iii Deiay, siveii	2.0					
Movement	EBL	EBR	NBL	NBT	SBT	SBF
Vol. veh/h	8	0	0	2	4	14
Conflicting Peds, #/hr	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- Stop	None	-	None	-	None
Storage Length	0	-		-	-	110110
Veh in Median Storage, #	0			0	0	
Grade, %	0	-	-	0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	9	0	0	2	4	15
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	14	12	20	0	-	0
Stage 1	12	-		-	-	
Stage 2	2			-		
Critical Hdwy	6.42	6.22	4.12	-	-	
Critical Hdwy Stg 1	5.42	-	-			-
Critical Hdwy Stg 2	5.42	-	-	-	-	
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1005	1069	1596	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %					-	
Mov Cap-1 Maneuver	1005	1069	1596	-	-	
Mov Cap-2 Maneuver	1005		-	-	-	
Stage 1	1011	-	-	-	-	-
Stage 2	1021	-	-	-		
Approach	EB		NB		SB	
HCM Control Delay, s	8.6		0		0	
HCM LOS	А					
Missan I ama /Marian Missant	NDI	NDT FDI-1	CDT CDD			
Minor Lane/Major Mvmt	NBL 1504	NBT EBLn1	SBT SBR			
Capacity (veh/h)	1596	- 1005				
HCM Cantral Dalay (a)	-	- 0.009				
HCM Control Delay (s) HCM Lane LOS	0 A	- 8.6 - A				
		- Δ				

SBT 1 0 Free - 0 0 92	SBR 0 0 Free None
1 0 Free - - 0 0	0 0 Free
0 Free - - 0 0	0 Free
Free - 0 0	Free
- 0 0	
0	None -
0	-
0	
	-
02	-
	92
2	2
1	0
Maior2	
-	0
	-
	-
	-
	-
	-
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	-
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	-
-	-
-	-
-	-
SR	
, and the same of	

Base + A AM 10/1/2014

Interposition				
Intersection				
Int Delay, s/veh				
Movement	SBL	SBT	SBR	
Vol, veh/h	0	0	5	
Conflicting Peds, #/hr	0	0	0	
Sign Control	Free	Free	Free	
RT Channelized	-	-	None	
Storage Length	-	-	-	
Veh in Median Storage, #	-	0	-	
Grade, %	-	0	-	
Peak Hour Factor	92	92	92	
Heavy Vehicles, %	2	2	2	
Mvmt Flow	0	0	5	
Major/Minor	Major2			
Conflicting Flow All	87	0	0	
Stage 1	-	-	-	
Stage 2	-	-	-	
Critical Hdwy	4.12	-	-	
Critical Hdwy Stg 1	-	-	-	
Critical Hdwy Stg 2	-	-	-	
Follow-up Hdwy	2.218	-	-	
Pot Cap-1 Maneuver	1509	-	-	
Stage 1	-	-	-	
Stage 2	-	-	-	
Platoon blocked, %		-	-	
Mov Cap-1 Maneuver	1509	-	-	
Mov Cap-2 Maneuver		-	-	
Stage 1	-	-	-	
Stage 2	-	-	-	
Approach	SB			
HCM Control Delay, s	0			
HCM LOS				
Minor Lana/Major Mumt				
Minor Lane/Major Mvmt				

HCM 95th %tile Q(veh)

Base + A PM 10/1/2014

Intersection									
Int Delay, s/veh	10.1								
Movement	EBL	EBT	EBR	WBI	. WBT	WBR	NBL	NBT	NBF
Vol, veh/h	7	113	18	20	170	6	48	35	354
Conflicting Peds, #/hr	0	0	0	(0	0	0	0	(
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None			None	-	-	None
Storage Length	125	-	50	100	-	100	-	-	
Veh in Median Storage, #	-	0	-		. 0	-	-	2	
Grade, %	-	0	-		. 0	-	-	0	
Peak Hour Factor	92	92	92	90	96	96	93	93	93
Heavy Vehicles, %	0	18	31	1	20	0	8	3	Ę
Mvmt Flow	8	123	20	210	177	6	52	38	381
Major/Minor	Major1			Majora			Minor1		
Conflicting Flow All	177	0	0	123		0	669	746	61
Stage 1		-	-			-	138	138	
Stage 2		-	-			-	531	608	
Critical Hdwy	4.1	-	-	4.32		-	7.66	6.56	7
Critical Hdwy Stg 1	-	-	-			-	6.66	5.56	
Critical Hdwy Stg 2	-	-	-				6.66	5.56	
Follow-up Hdwy	2.2	-	-	2.3	-	-	3.58	4.03	3.35
Pot Cap-1 Maneuver	1411	-	-	1398	-	-	332	338	982
Stage 1	-	-	-			-	834	779	
Stage 2	-	-	-				485	482	
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1411	-	-	1398	-	-	275	284	982
Mov Cap-2 Maneuver	-	-	-		-	-	353	375	
Stage 1	-	-	-		-	-	829	775	
Stage 2	-	-	-		-	-	383	408	
Approach	EB			WE			NB		
HCM Control Delay, s	0.4			4.3			17.9		
HCM LOS							С		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WBI		WBR	SBLn1		
Capacity (veh/h)	741	1411	-	- 1398		-	425		
HCM Lane V/C Ratio	0.634	0.005	-	- 0.15		-	0.079		
HCM Control Delay (s)	17.9	7.6	-	- {		-	14.2		
HCM Lane LOS	C	Δ		- 1			R		

Intersection			
Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	2	21	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-		None
Storage Length	-	-	-
Veh in Median Storage, #	-	2	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	5	13
Mvmt Flow	2	23	9
NA-i/NAi	Minor2		
Major/Minor		744	
Conflicting Flow All	703	746	89
Stage 1	608	608	-
Stage 2	95	138	-
Critical Hdwy	7.5	6.6	7.16
Critical Hdwy Stg 1	6.5	5.6	-
Critical Hdwy Stg 2	6.5	5.6	-
Follow-up Hdwy	3.5	4.05	3.43
Pot Cap-1 Maneuver	328	335	917
Stage 1	454	477	-
Stage 2	907	774	-
Platoon blocked, %			
Mov Cap-1 Maneuver	163	282	917
Mov Cap-2 Maneuver	273	369	-
Stage 1	451	403	-
Stage 2	525	770	-
Approach	SB		
HCM Control Delay, s	14.2		
HCM LOS	14.2 B		
HCIVI LUS	В		

HCM Lane LOS HCM 95th %tile Q(veh) Minor Lane/Major Mvmt

Int Delay, s/veh	9.4										
ili Delay, Siveri	7.4										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBR
Vol, veh/h	9	44	13		10	58	14		60	257	21
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	Stop
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	50		-	-	-		150	-	25
Veh in Median Storage, #	-	0	-		-	0	-		-	0	-
Grade, %	-	0	-		-	0	-		-	0	-
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	0	5	20		23	15	25		2	5	1
Mvmt Flow	10	48	14		11	63	15		65	279	23
Major/Minor	Major1				Major2				Minor1		
Conflicting Flow All	78	0	0		48	0	0		198	167	48
Stage 1	-	-	-		-	-	-		67	67	-
Stage 2	-	-	-		-	-	-		131	100	-
Critical Hdwy	4.1	-	-		4.33	-	-		7.12	6.55	6.21
Critical Hdwy Stg 1	-	-	-		-	-	-		6.12	5.55	-
Critical Hdwy Stg 2	-	-	-		-	-	-		6.12	5.55	-
Follow-up Hdwy	2.2	-	-		2.407	-	-		3.518	4.045	3.309
Pot Cap-1 Maneuver	1533	-	-		1435	-	-		761	720	1024
Stage 1	-	-	-		-	-	-		943	833	-
Stage 2	-	-	-		-	-	-		873	806	-
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1533	-	-		1435	-	-		689	709	1024
Mov Cap-2 Maneuver	-	-	-		-	-	-		689	709	-
Stage 1	-	-	-		-	-	-		936	827	-
Stage 2	•	-	•		-	-	-		783	800	-
Approach	EB				WB				NB		
HCM Control Delay, s	1				0.9				12.6		
HCM LOS	ı				0.9				12.0 B		
HCW LOS									Б		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	689	709	1024	1533	-	-	1435		-	635	
	0.095	0.394	0.022	0.006	-	-	0.008	-	-	0.14	
HCM Lane V/C Ratio											
HCM Lane V/C Ratio HCM Control Delay (s)		13.3	8.6	7.4	0	-	7.5	0	-	11.6	
HCM Lane V/C Ratio HCM Control Delay (s) HCM Lane LOS	10.8 B	13.3 B	8.6 A	7.4 A	0 A	-	7.5 A	0 A		11.6 B	

10/1/2014

SBI	CRT	SBR
		10
		0
		Stop
		None
-	-	-
-	-	-
-	-	-
		92
64	24	0
12	66	11
Minor2		
299	159	71
		-
		6.2
		0.2
		-
		3.3
		997
		-
672	798	-
367	685	997
367	685	-
778	772	-
432	792	-
SB		
JD		
11.4		
11.6 B		
	Minor2 92 64 12 299 92 207 7.74 6.74 4.076 547 783 672 367 778 432	11 61 0 0 Stop Stop Stop Stop Stop Stop Stop Stop

Intersection										
Int Delay, s/veh	7.9									
Movement	EBL	EBT	EBR		WBL	WBT	WBR	NB	L NBT	NBR
Vol, veh/h	3	0	1		70	0	206		0 85	3
Conflicting Peds, #/hr	0	0	0		0	0	0		0 0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Fre	e Free	Free
RT Channelized	-	-	None		-	-	None			None
Storage Length	-	-	-		-	-	-			
Veh in Median Storage, #	-	0	-		-	0	-		- 0	-
Grade, %	-	0	-		-	0	-		- 0	
Peak Hour Factor	92	92	92		92	92	92	9	2 92	92
Heavy Vehicles, %	0	0	0		2	0	3		0 4	0
Mvmt Flow	3	0	1		76	0	224		0 92	9
Major/Minor	Minor2				Minor1			Major	1	
Conflicting Flow All	420	312	48		308	308	97	4	8 0	0
Stage 1	211	211	-		97	97	-			
Stage 2	209	101	-		211	211	-			
Critical Hdwy	7.1	6.5	6.2		7.12	6.5	6.23	4.	1 -	
Critical Hdwy Stg 1	6.1	5.5	-		6.12	5.5	-			
Critical Hdwy Stg 2	6.1	5.5	-		6.12	5.5	-			
Follow-up Hdwy	3.5	4	3.3		3.518	4	3.327	2.	2 -	-
Pot Cap-1 Maneuver	547	606	1027		644	609	956	157	2 -	
Stage 1	796	731	-		910	819	-			-
Stage 2	798	815	-		791	731	-			
Platoon blocked, %										-
Mov Cap-1 Maneuver	399	569	1027		613	572	956	157	2 -	-
Mov Cap-2 Maneuver	399	569	-		613	572	-			-
Stage 1	796	686	-		910	819	-			-
Stage 2	611	815	-		742	686	-			-
Approach	EB				WB			N	В	
HCM Control Delay, s	12.7				11.7				0	
HCM LOS	В				В					
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1572	-	- INDIX	471	837	1381	- 351	-		
HCM Lane V/C Ratio	1372			0.009	0.358	0.059				
HCM Control Delay (s)	0			12.7	11.7	7.8	0			
HCM Lane LOS	A		-	12.7 B	В	7.0 A	A			

1.1			
Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	75	44	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	21	14	0
Mvmt Flow	82	48	0
Major/Minor	Major2		
	101	0	0
Conflicting Flow All		-	
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.31	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.389	-	-
Pot Cap-1 Maneuver	1381	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	400	-	-
Mov Cap-1 Maneuver	1381	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Approach	SB		
HCM Control Delay, s	4.9		
HCM LOS	1.7		

Intersection								
Int Delay, s/veh	2.7							
Movement	EBL		EBR	N	IBL	NBT	SBT	SBR
Vol, veh/h	13		25		56	80	30	85
Conflicting Peds, #/hr	0		0		0	0	0	0
Sign Control	Stop		Stop	F	ree	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	-
Veh in Median Storage, #	0		-		-	0	0	-
Grade, %	0		-		-	0	0	-
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	0		6		2	4	15	0
Mvmt Flow	14		27		61	87	33	92
Major/Minor	Minor2			Maj			Major2	
Conflicting Flow All	288		79		125	0	-	0
Stage 1	79		-		-	-	-	-
Stage 2	209		-		-	-		-
Critical Hdwy	6.4		6.26	4	.12	-	-	-
Critical Hdwy Stg 1	5.4		-		-	-	-	-
Critical Hdwy Stg 2	5.4		-		-	-	-	-
Follow-up Hdwy	3.5		3.354	2.2	218	-	-	-
Pot Cap-1 Maneuver	707		970	14	462	-	-	-
Stage 1	949		-		-	-	-	-
Stage 2	831		-		-	-	-	-
Platoon blocked, %						-	-	-
Mov Cap-1 Maneuver	676		970	14	462	-	-	-
Mov Cap-2 Maneuver	676		-		-		-	-
Stage 1	949		-		-		-	-
Stage 2	794		-		-	-	-	-
Approach	EB				NB		SB	
HCM Control Delay, s	9.5				3.1		0	
HCM LOS	A							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT S	BR			
Capacity (veh/h)	1462	INDI	844	- 100	-		<u> </u>	
HCM Lane V/C Ratio	0.042		0.049		-			
		-	9.5					
HCM Control Delay (s)	7.6 A	0 A	9.5 A	-	-			
HCM Lane LOS			0.2		-			
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-			

Intersection			
Int Delay, s/veh			
ini belay, s/ven			
Movement	SBL	SBT	SBR
Vol, veh/h	0	2	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	6
Mvmt Flow	0	2	4
-			
NA -:/h 4:	Minne		
Major/Minor	Minor2	454	404
Conflicting Flow All	148	151	101
Stage 1	103	103	-
Stage 2	45	48	-
Critical Hdwy	7.1	6.5	6.26
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.354
Pot Cap-1 Maneuver	825	744	943
Stage 1	908	814	-
Stage 2	974	859	-
Platoon blocked, %			
Mov Cap-1 Maneuver	822	743	943
Mov Cap-2 Maneuver	822	743	-
Stage 1	907	813	-
Stage 2	971	858	-
-			
A	CD		
Approach	SB		
HCM Control Delay, s	9.2		
HCM LOS	А		

0.1

HCM 95th %tile Q(veh)

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	- -	- -	None
Storage Length	-	-	-
Veh in Median Storage, #		0	
Grade, %	-	0	
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	0	6
Mymt Flow	0	0	1
WWW. Tiow	U	U	,
Major/Minor	Minor2		
Conflicting Flow All	125	126	87
Stage 1	87	87	-
Stage 2	38	39	-
Critical Hdwy	7.1	6.5	6.26
Critical Hdwy Stg 1	6.1	5.5	-
Critical Hdwy Stg 2	6.1	5.5	-
Follow-up Hdwy	3.5	4	3.354
Pot Cap-1 Maneuver	854	768	961
Stage 1	926	827	-
Stage 2	982	866	-
Platoon blocked, %			
Mov Cap-1 Maneuver	853	767	961
Mov Cap-2 Maneuver	853	767	-
Stage 1	925	827	-
Stage 2	981	865	-
A	CD		
Approach	SB		
HCM Control Delay, s	8.8		
HCM LOS	А		

9.3

0.1

7.6

0

0

HCM Control Delay (s)

HCM Lane LOS HCM 95th %tile Q(veh) 8.8

Intersection Int Delay, s/veh	0.3								
ini belay, siven	0.5								
Movement	EBL	EBT	EBR	WBI	_ WBT	WBR	NBL	NBT	NB
Vol, veh/h	6	0	1	(0 0	0	1	0	
Conflicting Peds, #/hr	0	0	0	(0 0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Fre
RT Channelized	-	-	None			None	-	-	Non
Storage Length	-	-	-			-	-	-	
Veh in Median Storage, #	-	0	-		- 0	-	-	0	
Grade, %	-	0	-		- 0	-	-	0	
Peak Hour Factor	92	92	92	92	2 92	92	92	92	9
Heavy Vehicles, %	0	27	0	() 6	6	0	0	
Mvmt Flow	7	0	1	(0	0	1	0	
Major/Minor	Minor2			Minor*	1		Major1		
Conflicting Flow All	11	11	9	12		0	17	0	
Stage 1	9	9	- 9		2 19	-	17	0	
	2	2		10		-	-		
Stage 2 Critical Hdwy	7.1	6.77	6.2	7.1		6.26	4.1		
Critical Hdwy Stg 1	6.1	5.77	0.2	6.		0.20	4.1	-	
Critical Hdwy Stg 2	6.1	5.77		6.		-	-	-	
Follow-up Hdwy	3.5	4.243	3.3	3.5		3.354	2.2		
Pot Cap-1 Maneuver	1012	836	1079	1010		3.334	1613		
Stage 1	1012	841	10/9	1010		-	1013	-	
Stage 2	1017	847		1020		-	-	-	
Platoon blocked, %	1020	047		1010	0/3				
Mov Cap-1 Maneuver		835	1079	1008	3 866		1613		
Mov Cap-1 Maneuver	-	835	1077	1008			1013		
Stage 1	1016	841	-	100					
Stage 2	1025	846	-	102.					
Stage 2	1023	040		101.	0/3				
Approach	EB			WE	3		NB		
HCM Control Delay, s				()		7.2		
HCM LOS	-			F	4				
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1 WBLn	1 SBL	SBT	SBR		
Capacity (veh/h)	1613	-	NDIX			- 301	-		
HCM Lane V/C Ratio	0.001					-	-		
HCM Control Delay (s)	7.2	0			0 0				
HCM Lane LOS	7.2 A	A) O	-	-		
HCM 95th %tile Q(veh)	0	А			4 A				

Intersection			
Int Delay, s/veh			
= 0.2,7, 2.10			
Marrana	CDI	CDT	CDD
Movement	SBL	SBT	SBR
Vol, veh/h	0	1	15
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	27	0	0
Mvmt Flow	0	1	16
Major/Minor	Major2		
		0	0
Conflicting Flow All	0		
Stage 1	-	-	-
Stage 2		-	-
Critical Hdwy	4.37	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.443	-	-
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1			
Stage 2	-		-
g- <u>-</u>			
Approach	SB		
HCM Control Delay, s	0		
HCM LOS			

Intersection									
Int Delay, s/veh	0.1								
Movement	EBL	EBT				WBT	WBR	SBL	SBR
Vol, veh/h	1	79				236	2	1	3
Conflicting Peds, #/hr	0	0				0	0	0	0
Sign Control	Free	Free				Free	Free	Stop	Stop
RT Channelized	-	None				-	None	-	None
Storage Length		-				-	-	0	-
Veh in Median Storage, #	-	0				0	-	0	
Grade, %		0				0	-	0	-
Peak Hour Factor	92	92				92	92	92	92
Heavy Vehicles, %	0	18				2	5	23	0
Mvmt Flow	1	86				257	2	1	3
Major/Minor	Major1					Major2		Minor2	
Conflicting Flow All	259	0				-	0	346	258
Stage 1	-	-					-	258	
Stage 2		-				-	-	88	
Critical Hdwy	4.1	-				-	-	6.63	6.2
Critical Hdwy Stg 1	-	-						5.63	
Critical Hdwy Stg 2	-	-				-	-	5.63	
Follow-up Hdwy	2.2	-				-	-	3.707	3.3
Pot Cap-1 Maneuver	1317	-				-	-	610	786
Stage 1	-	-				-	-	739	-
Stage 2	-	-				-	-	885	-
Platoon blocked, %		-				-	-		
Mov Cap-1 Maneuver	1317	-				-	-	609	786
Mov Cap-2 Maneuver	-	-				-	-	609	
Stage 1	-	-				-	-	739	
Stage 2	-	-				-	-	884	-
Approach	EB					WB		SB	
HCM Control Delay, s	0.1					0		9.9	
HCM LOS								А	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1				
Capacity (veh/h)	1317	-	-	-	733				
HCM Lane V/C Ratio	0.001	-	-	-	0.006				
HCM Control Delay (s)	7.7	0		-	9.9				
HCM Lane LOS	A	A	-	-	Α				
HCM 95th %tile Q(veh)	0	-	-	-	0				
	-				-				

FASTC 2018 Base + A PM Int 1-10.syn Cardno GS

Base + A PM

10: S. Main St & 8th St/W Entrance Rd

10/22/2014

	-	•	-	•	1	†	-	ţ	
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	10	16	172	102	4	525	58	431	
v/c Ratio	0.07	0.06	0.55	0.18	0.01	0.78	0.21	0.47	
Control Delay	43.7	0.5	40.8	6.0	17.5	31.7	11.7	14.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.7	0.5	40.8	6.0	17.5	31.7	11.7	14.4	
Queue Length 50th (ft)	5	0	79	0	1	223	13	123	
Queue Length 95th (ft)	24	0	174	36	8	406	36	231	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	229	343	601	632	593	1083	334	1414	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.05	0.29	0.16	0.01	0.48	0.17	0.30	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 10: S. Main St & 8th St/W Entrance Rd

Base + A PM 10/22/2014

	۶	→	•	•	+	•	1	†	~	/	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्स	7		र्स	7	7	1>		7	4	
Volume (veh/h)	1	8	15	137	21	94	4	384	99	55	404	6
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	170.1	190.0	190.0	185.5	171.2	190.0	182.7	190.0	166.7	182.8	190.0
Adj Flow Rate, veh/h	1	9	16	149	23	102	4	417	108	58	425	6
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	13	13	0	5	5	11	0	4	4	14	4	4
Cap, veh/h	12	110	117	214	33	273	476	550	143	287	950	13
Arrive On Green	0.07	0.07	0.07	0.14	0.14	0.14	0.39	0.39	0.39	0.05	0.53	0.53
Sat Flow, veh/h	169	1523	1615	1541	238	1455	972	1400	363	1587	1798	25
Grp Volume(v), veh/h	10	0	16	172	0	102	4	0	525	58	0	431
Grp Sat Flow(s),veh/h/ln	1693	0	1615	1778	0	1455	972	0	1763	1587	0	1823
Q Serve(g_s), s	0.4	0.0	0.6	6.4	0.0	4.2	0.2	0.0	17.8	1.4	0.0	10.1
Cycle Q Clear(g_c), s	0.4	0.0	0.6	6.4	0.0	4.2	0.9	0.0	17.8	1.4	0.0	10.1
Prop In Lane	0.10		1.00	0.87		1.00	1.00		0.21	1.00		0.01
Lane Grp Cap(c), veh/h	122	0	117	247	0	273	476	0	693	287	0	963
V/C Ratio(X)	0.08	0.00	0.14	0.70	0.00	0.37	0.01	0.00	0.76	0.20	0.00	0.45
Avail Cap(c_a), veh/h	245	0	234	643	0	597	727	0	1148	440	0	1610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	30.0	28.4	0.0	24.5	13.2	0.0	18.1	13.1	0.0	10.1
Incr Delay (d2), s/veh	0.3	0.0	0.5	3.5	0.0	0.9	0.0	0.0	1.7	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	3.3	0.0	1.8	0.0	0.0	8.9	0.6	0.0	5.1
LnGrp Delay(d),s/veh	30.2	0.0	30.6	31.9	0.0	25.4	13.2	0.0	19.9	13.5	0.0	10.4
LnGrp LOS	С		С	С		С	В		В	В		В
Approach Vol, veh/h		26			274			529			489	
Approach Delay, s/veh		30.4			29.5			19.8			10.8	
Approach LOS		С			С			В			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		15.6	9.4	33.2		11.0		42.5				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (q_c+l1), s		8.4	3.4	19.8		2.6		12.1				
Green Ext Time (p_c), s		1.2	0.0	7.4		0.0		8.4				
Intersection Summary												
HCM 2010 Ctrl Delay			18.7									
HCM 2010 LOS			В									

Base + A PM 10/22/2014

	•	•	1	Ť	ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	47	230	239	254	278	58
v/c Ratio	0.15	0.33	0.29	0.17	0.54	0.11
Control Delay	21.1	2.9	4.0	3.1	19.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	2.9	4.0	3.1	19.3	5.9
Queue Length 50th (ft)	8	0	0	0	44	0
Queue Length 95th (ft)	42	29	56	59	152	22
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1054	837	922	1719	1450	1413
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.27	0.26	0.15	0.19	0.04
Intersection Summary						

HCM 2010 Signalized Intersection Summary 11: S. Main St & Church St

Base + A PM 10/22/2014

<i>→ → → → →</i>
Movement EBL EBR NBL NBT SBR
Lane Configurations T T T T T T
Volume (veh/h) 43 212 220 234 256 53
Number 7 14 5 2 6 16
Initial Q (Qb), veh 0 0 0 0 0
Ped-Bike Adj(A pbT) 1.00 1.00 1.00 1.00
Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00
Adj Sat Flow, veh/h/ln 171.2 172.7 179.2 172.7 166.7 190.0
Adj Flow Rate, veh/h 47 230 239 254 278 58
Adj No. of Lanes 1 1 1 1 1 1 1
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92
Percent Heavy Veh, % 11 10 6 10 14 0
Cap, veh/h 308 483 510 919 421 408
Arrive On Green 0.19 0.19 0.14 0.53 0.25 0.25
Sat Flow, veh/h 1630 1468 1707 1727 1667 1615
Grp Volume(v), veh/h 47 230 239 254 278 58
Grp Sat Flow(s),veh/h/ln 1630 1468 1707 1727 1667 1615
Q Serve(g_s), s 1.0 5.4 3.9 3.5 6.4 1.2
Cycle Q Clear(g_c), s 1.0 5.4 3.9 3.5 6.4 1.2
Prop In Lane 1.00 1.00 1.00 1.00
Lane Grp Cap(c), veh/h 308 483 510 919 421 408
V/C Ratio(X) 0.15 0.48 0.47 0.28 0.66 0.14
Avail Cap(c_a), veh/h 947 1058 865 2447 1548 1500
HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00
Upstream Filter(I) 1.00 1.00 1.00 1.00 1.00 1.00
Uniform Delay (d), s/veh 14.6 11.5 9.0 5.5 14.4 12.5
Incr Delay (d2), s/veh 0.3 0.9 0.7 0.1 0.7 0.1
Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0
%ile BackOfQ(50%),veh/ln 0.5 4.7 1.9 1.6 3.0 0.5
Approach Vol, veh/h 277 493 336
Approach Delay, s/veh 12.8 7.5 14.7
Approach LOS B A B
Timer 1 2 3 4 5 6
Assigned Phs 2 4 5 6
Phs Duration (G+Y+Rc), s 28.9 14.1 12.0 16.9
Change Period (Y+Rc), s 6.0 6.0 6.0 6.0
Max Green Setting (Gmax), s 61.0 25.0 15.0 40.0
Max Q Clear Time (q c+l1), s 5.5 7.4 5.9 8.4
Green Ext Time (p_c), s 2.5 1.1 0.5 2.4
Intersection Summary

FASTC 2018 Base + A PM Int 11-18.syn Cardno GS

Queues 12: N. Main St & Dinwiddie Ave Base + A PM 10/22/2014

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	31	50	105	8	268	25	296
v/c Ratio	0.08	0.11	0.17	0.32	0.02	0.47	0.06	0.43
Control Delay	27.4	22.8	25.9	14.2	17.4	20.3	10.7	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	22.8	25.9	14.2	17.4	20.3	10.7	14.3
Queue Length 50th (ft)	6	6	12	7	2	58	5	67
Queue Length 95th (ft)	30	33	50	54	12	167	18	136
Internal Link Dist (ft)		598		847		888		606
Turn Bay Length (ft)	100		150		100		100	
Base Capacity (vph)	541	551	1082	986	759	1180	602	1552
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.06	0.05	0.11	0.01	0.23	0.04	0.19
Intersection Summary								

HCM 2010 Signalized Intersection Summary 12: N. Main St & Dinwiddie Ave

Base + A PM 10/22/2014

	•	→	•	•	-	•	1	1	_	~	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	, N	1		ř	1>		7	1>		Ĭ,	1	
Volume (veh/h)	20	20	8	46	28	69	7	198	49	23	251	21
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	C
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	178.5	190.0	190.0	175.6	190.0	182.7	171.1	190.0
Adj Flow Rate, veh/h	22	22	9	50	30	75	8	215	53	25	273	23
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	C
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	173	122	50	216	54	135	452	390	96	374	687	58
Arrive On Green	0.10	0.10	0.10	0.12	0.12	0.12	0.29	0.29	0.29	0.04	0.44	0.44
Sat Flow, veh/h	1810	1283	525	1810	453	1132	1100	1361	336	1740	1556	131
Grp Volume(v), veh/h	22	0	31	50	0	105	8	0	268	25	0	296
Grp Sat Flow(s),veh/h/ln	1810	0	1807	1810	0	1585	1100	0	1697	1740	0	1688
Q Serve(g_s), s	0.6	0.0	0.8	1.3	0.0	3.3	0.3	0.0	7.0	0.5	0.0	6.2
Cycle Q Clear(g_c), s	0.6	0.0	0.8	1.3	0.0	3.3	0.3	0.0	7.0	0.5	0.0	6.2
Prop In Lane	1.00		0.29	1.00		0.71	1.00		0.20	1.00		0.08
Lane Grp Cap(c), veh/h	173	0	172	216	0	190	452	0	486	374	0	745
V/C Ratio(X)	0.13	0.00	0.18	0.23	0.00	0.55	0.02	0.00	0.55	0.07	0.00	0.40
Avail Cap(c_a), veh/h	518	0	517	1036	0	908	872	0	1133	801	0	1803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	21.8	20.9	0.0	21.7	13.4	0.0	15.9	11.5	0.0	9.9
Incr Delay (d2), s/veh	0.5	0.0	0.7	0.8	0.0	3.6	0.0	0.0	1.4	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	0.7	0.0	1.6	0.1	0.0	3.5	0.2	0.0	3.0
LnGrp Delay(d),s/veh	22.2	0.0	22.5	21.7	0.0	25.3	13.5	0.0	17.2	11.6	0.0	10.4
LnGrp LOS	С		С	С		С	В		В	В		Е
Approach Vol, veh/h		53			155			276			321	
Approach Delay, s/veh		22.4			24.1			17.1			10.5	
Approach LOS		С			С			В			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.0	8.1	21.0		12.3		29.1				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (g_c+I1), s		2.8	2.5	9.0		5.3		8.2				
Green Ext Time (p_c), s		0.1	0.0	5.5		1.1		6.3				
Intersection Summary												
HCM 2010 Ctrl Delay			16.2									
HCM 2010 LOS			В									

Intersection								
Int Delay, s/veh	1.8							
Movement		EBT	EBR	W	/BL	WBT	NBL	NBF
Vol, veh/h		57	8		5	45	20	4
Conflicting Peds, #/hr		0	0		0	0	0	(
Sign Control		Free	Free	Fr	ree	Free	Stop	Stor
RT Channelized		-	None		-	None	-	None
Storage Length		-	100	2	247	-	0	
Veh in Median Storage, #		0	-		-	0	0	
Grade, %		0	-		-	0	0	
Peak Hour Factor		92	92		92	92	92	92
Heavy Vehicles, %		2	2		2	2	2	2
Mvmt Flow		62	9		5	49	22	4
Major/Minor	N	Najor1		Majo	or2		Minor1	
Conflicting Flow All		0	0		62	0	122	62
Stage 1		-			-		62	
Stage 2		-	-		-		60	
Critical Hdwy		-		4.	.12		6.42	6.22
Critical Hdwy Stg 1		-	-		-	-	5.42	
Critical Hdwy Stg 2		-	-		-	-	5.42	
Follow-up Hdwy		-	-	2.2	218	-	3.518	3.318
Pot Cap-1 Maneuver		-	-	15	541	-	873	1003
Stage 1		-	-		-		961	
Stage 2		-	-		-	-	963	
Platoon blocked, %		-	-			-		
Mov Cap-1 Maneuver		-	-	15	541	-	870	1003
Mov Cap-2 Maneuver		-	-		-	-	870	
Stage 1		-	-		-	-	961	
Stage 2		-	-		-	-	960	
Approach		EB		V	NB		NB	
HCM Control Delay, s		0		(0.7		9.2	
HCM LOS							A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL W	ВТ			
Capacity (veh/h)	890	-	-	1541	-			
HCM Lane V/C Ratio	0.029		-	0.004	-			
HCM Control Delay (s)	9.2		-	7.3	-			
HCM Lane LOS	А		-	Α	-			
HCM 95th %tile Q(veh)	0.1			0				

Int Delay, s/veh	0					
in Delay, siven	U					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	1	62	153	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-		-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	1	67	166	0	0	0
				-	_	
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	333	0	0	0	-	0
Stage 1	0					
Stage 2	333	_		-		
Critical Hdwy	6.42	6.22	4.12			
Critical Hdwy Stg 1	5.42	-	2	-		_
Critical Hdwy Stg 2	5.42					
Follow-up Hdwy	3.518	3.318	2.218	-		
Pot Cap-1 Maneuver	662	-	2.2.0			_
Stage 1	-	_	_	_	_	
Stage 2	726					
Platoon blocked, %	720					
Mov Cap-1 Maneuver	662		_	_		
Mov Cap-1 Maneuver	662	-				
Stage 1	- 002	-				
Stage 2	726					
Stage 2	720	-	•	•	•	
Approach	EB		NB		SB	
	ED		0		<u> </u>	
HCM Control Delay, s			0		U	
HCM LOS	-					
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	-					
HCM Cantral Dalay (a)	-					
HCM Control Delay (s)	-					
HCM Lane LOS	-					
HCM 95th %tile Q(veh)	-					

4.7

EBL

21

Stop

0

0

92

2

23

13

9

6.42

5.42 5.42 3.518

1006

1014 1019

1006

1006

1014

1019

8.7

1603

0

Minor2

EBR

Stop

None

0

0

92

2

0

9

6.22

3.318

1073

1073

NBT EBLn1

1006 0.023

8.7

0.1

0

0

Free

92

2

0

Major1

15

4.12

2.218

1603

1603

4

0

0

92

2

0

Free

None

Intersection Int Delay, s/veh

Movement

Vol, veh/h

Grade, % Peak Hour Factor

Mvmt Flow

Major/Minor

Sign Control

RT Channelized

Storage Length Veh in Median Storage, #

Heavy Vehicles, %

Conflicting Flow All

Stage 1

Stage 2 Critical Hdwy

Critical Hdwy Stg 1
Critical Hdwy Stg 2
Follow-up Hdwy

Pot Cap-1 Maneuver

Stage 1

Stage 2 Platoon blocked. % Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

Minor Lane/Major Mvmt

Capacity (veh/h) HCM Lane V/C Ratio

HCM Control Delay (s)

HCM Lane LOS HCM 95th %tile Q(veh)

Approach HCM Control Delay, s

HCM LOS

Conflicting Peds, #/hr

3

0

0

92

2 2

3 12

Maior2

Free Free

11

None

92

0

0

Intersection Int Delay, s/veh	8.9							
ini Delay, siven	0.7							
Movement	EBL		EBR		NBL	NBT	SBT	SBR
Vol, veh/h	151		15		0	6	1	C
Conflicting Peds, #/hr	0		0		0	0	0	C
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	-
Veh in Median Storage, #	0		-		-	0	0	-
Grade, %	0		-		-	0	0	-
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	2		2		2	2	2	2
Mvmt Flow	164		16		0	7	1	0
Major/Minor	Minor2			N	lajor1		Major2	
Conflicting Flow All	8		1		1	0	-	C
Stage 1	1		-		-	-	-	
Stage 2	7		-		-	-	-	
Critical Hdwy	6.42		6.22		4.12	-	-	
Critical Hdwy Stg 1	5.42		-		-	-	-	-
Critical Hdwy Stg 2	5.42		-		-	-	-	
Follow-up Hdwy	3.518		3.318		2.218	-	-	-
Pot Cap-1 Maneuver	1013		1084		1622	-	-	-
Stage 1	1022		-		-	-	-	
Stage 2	1016		-		-	-	-	
Platoon blocked, %						-	-	-
Mov Cap-1 Maneuver	1013		1084		1622	-	-	-
Mov Cap-2 Maneuver	1013		-		-	-	-	
Stage 1	1022		-		-	-	-	
Stage 2	1016		-		-	-		-
Approach	EB				NB		SB	
HCM Control Delay, s	9.3				0		0	
HCM LOS	А							
Minor Lane/Major Mvmt	NBL		EBLn1	SBT	SBR			
Capacity (veh/h)	1622	-	1019	-	-			
HCM Lane V/C Ratio	-	-	0.177	-	-			
HCM Control Delay (s)	0	-	9.3	-	-			
HCM Lane LOS	A	-	Α	-	-			
HCM 95th %tile Q(veh)	0	-	0.6	-	-			

FASTC 2018 Base + A PM Int 11-18.syn	Synchro 8 Light Report
Cardno GS	Page 3

SBT SBR Base + A PM 10/1/2014

Intersection										
Int Delay, s/veh	0.7									
	501	EDT	500		11151	WOT	14/00	NO	No.	ND.
Movement	EBL	EBT	EBR		WBL	WBT	WBR	NBL	NBT	NBF
Vol, veh/h	2	0	1		0	0	11	0	157	(
Conflicting Peds, #/hr	0	0	0		0	0	0	0	0	
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None		-	-	None	-	-	None
Storage Length	-	-	-		-	-	-	-	-	
Veh in Median Storage, #	-	0	-		-	0	-	-	0	
Grade, %	-	0	-		-	0	-	-	0	
Peak Hour Factor	92	92	92		92	92	92	92	92	92
Heavy Vehicles, %	2	2	2		2	2	2	2	2	2
Mvmt Flow	2	0	1		0	0	12	0	171	C
Major/Minor	Minor2				Minor1			Major1		
	179	173	2		173	174	171	3	0	(
Conflicting Flow All	2	2	-		173	174	1/1		-	
Stage 1		171			2	3		-		
Stage 2	177		- ())				- (22	- 410	-	
Critical Hdwy	7.12	6.52	6.22		7.12	6.52	6.22	4.12	-	
Critical Hdwy Stg 1	6.12	5.52	-		6.12	5.52	-	-	-	
Critical Hdwy Stg 2	6.12	5.52	- 0.010		6.12	5.52	-	- 0.010	-	
Follow-up Hdwy	3.518	4.018	3.318		3.518	4.018	3.318	2.218	-	
Pot Cap-1 Maneuver	783	720	1082		790	719	873	1619	-	
Stage 1	1021	894	-		831	757	-	-	-	
Stage 2	825	757	-		1021	893	-	-	-	
Platoon blocked, %									-	
Mov Cap-1 Maneuver	772	720	1082		789	719	873	1619	-	
Mov Cap-2 Maneuver	772	720	-		789	719	-	-	-	
Stage 1	1021	894	-		831	757	-	-	-	
Stage 2	814	757	-		1020	893	•	•	-	
Approach	EB				WB			NB		
HCM Control Delay, s	9.2				9.2			0		
HCM LOS	A.2				Α.Δ			U		
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1619	-	-	854	873	1406	-	-		
HCM Lane V/C Ratio	-	-	-	0.004	0.014	-	-	-		
HCM Control Delay (s)	0	-	-	9.2	9.2	0	-	-		
HCM Lane LOS	А	-	-	Α	Α	Α	-	-		
HCM 95th %tile Q(veh)	0			0	0	0				

Intersection			
Int Delay, s/veh			
·			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	3
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mymt Flow	0	0	3
Maine/Minne	Maiaso		
Major/Minor	Major2		
Conflicting Flow All	171	0	0
Stage 1		-	-
Stage 2		-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1406	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1406	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Approach	SB		
HCM Control Delay, s	0		
HCM LOS			
Minor Lane/Major Mvmt			

Base + B AM

10/2/2014

Intersection									
Int Delay, s/veh	7.7								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBI
Vol, veh/h	1	150	33	386	97	2	17	7	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	(
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Sto
RT Channelized	-	-	None		-	None	-	-	None
Storage Length	125	-	50	100	-	100	-	-	
Veh in Median Storage, #	-	0	-	-	0		-	2	
Grade, %	-	0	-	-	0	-	-	0	
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	13	3	7	25	0	20	0	12
Mvmt Flow	1	163	36	420	105	2	18	8	157
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	105	0	0	163	0	0	1072	1110	82
Stage 1	-	-	-	-	-	-	165	165	
Stage 2		-	-	-	-	-	907	945	
Critical Hdwy	6.1	-	-	4.24	-	-	7.9	6.5	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	6.9	5.5	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.9	5.5	
Follow-up Hdwy	3.2	-	-	2.27	-	-	3.7	4	3.42
Pot Cap-1 Maneuver	986	-	-	1377	-	-	153	211	930
Stage 1	-	-	-	-	-	-	771	766	
Stage 2	-	-	-	-	-	-	263	343	
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	986	-	-	1377	-	-	104	146	930
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	223	
Stage 1	-	-	-	-	-	-	770	765	
Stage 2		-	•	-	-	-	158	238	
A	ED.			WB			NB		
Approach	EB0			7 VVB					
HCM Control Delay, s	0			/			14.5 B		
HCM LOS							R		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	559	986	-	- 1377	- 4401	- VIDIC	265		
HCM Lane V/C Ratio	0.327	0.001		- 0.305			0.176		
HCM Control Dolay (c)	1/ 5	0.001		- 0.303			0.170		

1.3

14.5 8.7

1.4

B A

-			
Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	5	27	11
Conflicting Peds, #/hr	0	0	0
Sign Control RT Channelized	Stop	Stop	Stop None
		-	
Storage Length	-	-	-
Veh in Median Storage, #	-	2	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	4	9
Mvmt Flow	5	29	12
Major/Minor	Minor2		
Conflicting Flow All	1033	1110	53
Stage 1	945	945	-
Stage 2	88	165	
Critical Hdwy	7.5	6.58	7.08
Critical Hdwy Stg 1	6.5	5.58	-
Critical Hdwy Stg 2	6.5	5.58	
Follow-up Hdwy	3.5	4.04	3.39
Pot Cap-1 Maneuver	189	205	981
Stage 1	285	334	701
	916	756	
Stage 2 Platoon blocked, %	910	/50	-
	447	1.10	004
Mov Cap-1 Maneuver	117	142	981
Mov Cap-2 Maneuver	230	209	-
Stage 1	285	232	-
Stage 2	753	755	-
Approach	SB		
HCM Control Delay, s	21.5		
HCM LOS	C		
Minor Lane/Major Mymt			

Minor Lane/Major Mvmt

HCM Control Delay (s)

HCM 95th %tile Q(veh)

HCM Lane LOS

С

0.6

- 21.5

5.9

EBT **EBR**

83

Free

0

0

92

6

90

0

Maior1

2

0

Free

None

92

0

0

WBL

341

Free Free

92

3

371

Major2

92

4.13

2.227

1496

1496

6.3

WBT

0

Α

0

104

None

0

0

92

13

113

0

Intersection Int Delay, s/veh

Movement

Vol, veh/h

Grade, %

Mvmt Flow

Major/Minor

Critical Hdwy

Sign Control

RT Channelized

Storage Length Veh in Median Storage, #

Peak Hour Factor

Heavy Vehicles, %

Conflicting Flow All

Stage 1

Stage 2

Critical Hdwy Stg 1 Critical Hdwy Stg 2

Pot Cap-1 Maneuver

Stage 1

Stage 2 Platoon blocked. % Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

Minor Lane/Major Mvmt

HCM Lane V/C Ratio

HCM Control Delay (s)

HCM 95th %tile Q(veh)

Capacity (veh/h)

HCM Lane LOS

Approach HCM Control Delay, s

HCM LOS

Follow-up Hdwy

Conflicting Peds, #/hr

0

0

92

0

Minor1

945

91

854

6.4

5.4

3.5

293

938 421

215

215

938

309

9.6

Stop

85

Stop

None

92

24

92

91

6.44

3.516

909

909

0

Intersection Int Delay, s/veh	8.5										
ini belay, siven	0.0										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NE
Vol, veh/h	9	41	135		13	19	53		9	23	
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	St
RT Channelized	-	-	None		-	-	None		-	-	No
Storage Length	-	-	50		-	-	-		150	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		95	95	95		92	92	
Heavy Vehicles, %	0	18	1		1	11	63		9	21	
Mvmt Flow	10	45	147		14	20	56		10	25	
Major/Minor	Major1			M	lajor2				Minor1		
Conflicting Flow All	76	0	0		45	0	0		243	167	
Stage 1	-	-	-		-	-	-		64	64	
Stage 2	-	-	-		-	-	-		179	103	
Critical Hdwy	4.1	-	-		4.11	-	-		7.19	6.71	6.
Critical Hdwy Stg 1	-	-	-		-	-	-		6.19	5.71	
Critical Hdwy Stg 2	-	-	-		-	-	-		6.19	5.71	
Follow-up Hdwy	2.2	-	-		2.209	-	-		3.581	4.189	3.4
Pot Cap-1 Maneuver	1536	-	-		1570	-	-		697	693	9
Stage 1	-	-	-		-	-	-		930	806	
Stage 2	-	-	-		-	-	-		807	774	
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1536	-	-		1570	-	-		540	682	9
Mov Cap-2 Maneuver	-	-	-		-	-	-		540	682	
Stage 1	-	-	-			-	-		923	800	
Stage 2	-	-	-		-		-		600	767	
Approach	EB				WB				NB		
HCM Control Delay, s	0.4				1.1				10.9		
HCM LOS									В		
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	540	682	-	1536	-	-	1570	-	-	746	
HCM Lane V/C Ratio	0.018	0.037	-	0.006	-	-	0.009	-	-	0.498	
HCM Control Delay (s)	11.8	10.5	0	7.4	0	-	7.3	0	-	14.5	
HCM Lane LOS	В	В	Α	Α	Α	-	Α	Α	-	В	
HCM 95th %tile Q(veh)	0.1	0.1	-	0	-	-	0	-	-	2.8	

NBLn1

876

0.107

9.6

0.4

EBT

EBR WBL

1496

0.248

8.2

SBL	SBT	SBR
151	186	5
0	0	0
Stop	Stop	Stop
		None
	-	-
	0	-
	0	-
92	92	92
18	3	0
		5
		48
		-
		-
		6.2
6.28		-
6.28	5.53	-
3.662	4.027	3.3
780	750	1027
896	831	-
894	840	-
749	738	1027
		-
		-
000	034	
0.0		
SB		
14.5		
14.5 B		
	151 0 Stop - - - - 92 18 164 Minor2 152 75 77 7.28 6.28 6.28 6.28 3.662 780 896 894 749 749 890 860	151 186 0 0 Stop Stop

Int Delay, s/veh	2.6										
ini belay, siven	2.0										
Movement	EBL	EBT	EBR		WBL	WBT	WBR	١	IBL	NBT	NBF
Vol, veh/h	0	0	0		11	0	12		0	92	3
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	(
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	F	ree	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None
Storage Length	-	-	-		-	-	-		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	26	0	26		1	0	29		5	2	6
Mvmt Flow	0	0	0		12	0	13		0	100	40
Major/Minor	Minor2				Minor1			Ma	or1		
Conflicting Flow All	418	431	109		411	411	120		109	0	(
Stage 1	291	291	-		120	120	-		-	-	
Stage 2	127	140	-		291	291	-		-	-	
Critical Hdwy	7.36	6.5	6.46		7.11	6.5	6.49		.15	-	
Critical Hdwy Stg 1	6.36	5.5	-		6.11	5.5	-		-	-	
Critical Hdwy Stg 2	6.36	5.5	-		6.11	5.5	-			-	
Follow-up Hdwy	3.734	4	3.534		3.509	4	3.561	2.	245	-	
Pot Cap-1 Maneuver	506	520	883		553	534	864	1	463	-	
Stage 1	668	675	-		887	800	-		-	-	
Stage 2	822	785	-		719	675	-			-	
Platoon blocked, %										-	
Mov Cap-1 Maneuver	473	485	883		525	498	864	1	463	-	
Mov Cap-2 Maneuver	473	485	-		525	498	-		-	-	
Stage 1	668	630	-		887	800	-			-	
Stage 2	810	785	-		671	630	-		-	-	
Approach	EB				WB				NB		
HCM Control Delay, s	0				10.7				0		
HCM LOS	А				В						
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1463	-	-	-	660	1437	-	-			
HCM Lane V/C Ratio	-	-	-	-	0.038	0.064	-	-			
HCM Control Delay (s)	0	-	-	0	10.7	7.7	0	-			
HCM Lane LOS	A	-	-	Α	В	Α	Α				
HCM 95th %tile Q(veh)	0	-	_	-	0.1	0.2	-	-			

+. iviilitai y	KU & FASTC	Iviaiii Cai	TIPUS/VV	TOUT

Intersection				
Int Delay, s/veh				
,				
Movement	SBL	SBT	SBR)
	84	100	3BR 0	
Vol, veh/h	0	0	0	
Conflicting Peds, #/hr	-			
Sign Control RT Channelized	Free	Free	Free	
		-	None	
Storage Length		-	-	
Veh in Median Storage, #		0	-	
Grade, % Peak Hour Factor	92	92	92	
Heavy Vehicles, %	3	2	5	
Mvmt Flow	91	109	0)
Major/Minor	Major2			
Conflicting Flow All	140	0	0)
Stage 1	-	-	-	-
Stage 2	-	-	-	
Critical Hdwy	4.13	-	-	
Critical Hdwy Stg 1	-	-	-	
Critical Hdwy Stg 2	-	-	-	
Follow-up Hdwy	2.227	-	-	
Pot Cap-1 Maneuver	1437	-	-	
Stage 1	-	-	-	
Stage 2	-	-	-	
Platoon blocked, %		-	-	
Mov Cap-1 Maneuver	1437	-	-	
Mov Cap-2 Maneuver	-	-	-	
Stage 1	-	-	-	
Stage 2	-	-	-	
Approach	SB			
HCM Control Delay, s	3.5			

/ ipprodorr	- 05
HCM Control Delay, s	3.5
HCM LOS	

Intersection						
Int Delay, s/veh	5.8					
ilit Delay, S/veii	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	105	62	10	23	100	11
Conflicting Peds, #/hr	0	0	0	0	0	C
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	
Grade, %	0	-	-	0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	10	2	3
Mvmt Flow	114	67	11	25	109	12
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	162	115	121	0	-	C
Stage 1	115	-	-	-	-	
Stage 2	47		-	-	-	
Critical Hdwy	6.42	6.22	4.14	-	-	
Critical Hdwy Stg 1	5.42		-	-	-	
Critical Hdwy Stg 2	5.42	-	-	-	-	
Follow-up Hdwy	3.518	3.318	2.236	-	-	
Pot Cap-1 Maneuver	829	937	1454	-	-	
Stage 1	910	-	-	-	-	
Stage 2	975	-	-	-	-	
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	822	937	1454	-	-	-
Mov Cap-2 Maneuver	822		-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	967	-	-		-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.3		2.3		0	
HCM LOS	В					
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	1454	- 861				
HCM Lane V/C Ratio	0.007	- 0.211				
HCM Control Delay (s)	7.5	0 103				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1454	-	861	-	-	
HCM Lane V/C Ratio	0.007	-	0.211	-	-	
HCM Control Delay (s)	7.5	0	10.3	-	-	
HCM Lane LOS	Α	Α	В	-	-	
HCM 95th %tile Q(veh)	0	-	0.8	-	-	

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	1	1	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	Siup -	Slup -	None
Storage Length		-	None -
Veh in Median Storage, #		0	
Grade, %	-	0	
Peak Hour Factor	92	92	92
	92	2	
Heavy Vehicles, %			2
Mvmt Flow	1	1	7
Major/Minor	Minor2		
Conflicting Flow All	164	175	18
Stage 1	21	21	
Stage 2	143	154	
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	801	718	1061
Stage 1	998	878	-
Stage 2	860	770	
Platoon blocked, %	000	770	
Mov Cap-1 Maneuver	800	717	1061
Mov Cap-1 Maneuver	800	717	-
Stage 1	997	877	
Stage 2	859	769	
Stage 2	037	707	
Approach	SB		
HCM Control Delay, s	8.8		
HCM LOS	A		

Intersection Int Delay, s/veh	1.1								
ilit Delay, s/veii	1.1								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBF
Vol, veh/h	1	119	21	1	17	0	11	0	(
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	(
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-		None	-	-	None	-		None
Storage Length	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	
Grade, %	-	0	-	-	0	-	-	0	
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	1	10	0	6	2	18	2	(
Mvmt Flow	1	129	23	1	18	0	12	0	(
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	18	0	0	152	0	0	167	164	141
Stage 1	-	-	-	-	-	-	143	143	
Stage 2	-	-	-	-	-	-	24	21	
Critical Hdwy	4.12	-	-	4.1	-	-	7.28	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.28	5.52	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.28	5.52	
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.662	4.018	3.3
Pot Cap-1 Maneuver	1599	-	-	1441	-	-	763	729	912
Stage 1	-	-	-	-	-	-	823	779	
Stage 2	-	-	-	-	-	-	954	878	
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1599	-	-	1441	-	-	756	728	912
Mov Cap-2 Maneuver	-	-	-	-	-	-	756	728	
Stage 1	-	-	-	-	-	-	822	778	
Stage 2	-	-	-	-	-	-	946	877	
				V					
Approach	EB			WB			NB		
HCM Control Delay, s	0.1			0.4			9.8		
HCM LOS							Α		

1441

0.001

7.5

0

0

FASTC 2018 Base + B AM Int 1-10.syn Cardno GS

756 1599

0.016 0.001

7.3

Minor Lane/Major Mvmt

Capacity (veh/h)
HCM Lane V/C Ratio

HCM Control Delay (s)

HCM Lane LOS HCM 95th %tile Q(veh)

> Synchro 8 Light Report Page 9

964

8.8

0.009

FASTC 2018 Base + B AM Int 1-10.syn Cardno GS

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	830	1604	-	-	1469	-	-	1066	
HCM Lane V/C Ratio	0.005	0.001	-	-	-	-	-	0.001	
HCM Control Delay (s)	9.4	7.2	0	-	0	-	-	8.4	
HCM Lane LOS	Α	Α	Α	-	Α	-	-	Α	
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	

0.1

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol. veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length			-
Veh in Median Storage, #		0	
Grade, %		0	
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mymt Flow	0	0	1
WVIIIL FIOW	U	U	- 1
Major/Minor	Minor2		
Conflicting Flow All	140	146	14
Stage 1	14	14	-
Stage 2	126	132	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	830	745	1066
Stage 1	1006	884	-
Stage 2	878	787	
Platoon blocked. %	010	707	
Mov Cap-1 Maneuver	829	744	1066
Mov Cap-1 Maneuver	829	744	-
Stage 1	1005	884	
Stage 2	877	786	
Stage 2	0//	700	-
Approach	SB		
HCM Control Delay, s	8.4		
HCM LOS	Α		

Approach HCM Control Delay, s

HCM LOS

9.4

Minor Lane/Major Mvmt

Base + B AM

Intersection Int Delay, s/veh	6.7							
iiit Deidy, Siveri	0.7							
Movement	EBL		EBR		NBL	NBT	SBT	SBI
Vol, veh/h	16		4		3	0	1	
Conflicting Peds, #/hr	0		0		0	0	0	(
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	
Veh in Median Storage, #	0		-		-	0	0	
Grade, %	0		-		-	0	0	
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	5		0		0	0	0	20
Mvmt Flow	17		4		3	0	1	į
Major/Minor	Minor2			N	lajor1		Major2	
Conflicting Flow All	11		4		7	0		(
Stage 1	4		-			-	-	
Stage 2	7					-	-	
Critical Hdwy	6.45		6.2		4.1	-	-	
Critical Hdwy Stg 1	5.45		-			-		
Critical Hdwy Stg 2	5.45					-	-	
Follow-up Hdwy	3.545		3.3		2.2	-		
Pot Cap-1 Maneuver	1001		1085		1627	-	-	
Stage 1	1011		-			-		
Stage 2	1008					-	-	
Platoon blocked, %						-		
Mov Cap-1 Maneuver	999		1085		1627	-	-	
Mov Cap-2 Maneuver	999		-		-	-	-	
Stage 1	1011		-			-	-	
Stage 2	1006		-		-		-	
Approach	EB				NB		SB	
HCM Control Delay, s	8.6				7.2		0	
HCM LOS	А							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	1627	-	1015	-	-			
HCM Lane V/C Ratio	0.002	-	0.021	-	-			
HCM Control Delay (s)	7.2	0	8.6	-	-			
HCM Lane LOS	A	Α	Α	-	-			
LICALOUGH DANG OF CALL	0		0.1					

Intersection									
Int Delay, s/veh	0.5								
Movement	EBL	EBT				WBT	WBR	SBL	SBI
Vol, veh/h	3	80				22	5	2	:
Conflicting Peds, #/hr	0	0				0	0	0	(
Sign Control	Free	Free				Free	Free	Stop	Stop
RT Channelized	-	None				-	None	-	None
Storage Length	-	-				-	-	0	
Veh in Median Storage, #	-	0				0	-	0	
Grade, %	-	0				0	-	0	
Peak Hour Factor	92	92				92	92	92	92
Heavy Vehicles, %	67	4				23	12	4	(
Mvmt Flow	3	87				24	5	2	2
Major/Minor	Major1					Major2		Minor2	
Conflicting Flow All	29	0				-	0	120	2
Stage 1	-	-				-		27	
Stage 2		-				-	-	93	
Critical Hdwy	4.77	-				-		6.44	6.2
Critical Hdwy Stg 1	-	-				-	-	5.44	
Critical Hdwy Stg 2	-	-				-		5.44	
Follow-up Hdwy	2.803	-				-	-	3.536	3.3
Pot Cap-1 Maneuver	1250	-				-	-	871	1054
Stage 1	-	-				-	-	990	
Stage 2	-	-				-	-	926	
Platoon blocked, %		-				-	-		
Mov Cap-1 Maneuver	1250	-				-	-	868	1054
Mov Cap-2 Maneuver	-	-				-	-	868	
Stage 1		-				-	-	990	
Stage 2	-	-				-	-	923	
Approach	EB					WB		SB	
HCM Control Delay, s	0.3					0		8.8	
HCM LOS								А	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1				

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1250	-	-	-	952	
HCM Lane V/C Ratio	0.003	-	-	-	0.005	
HCM Control Delay (s)	7.9	0	-	-	8.8	
HCM Lane LOS	А	Α	-	-	Α	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 95th %tile Q(veh)

Base + B AM 10/22/2014

10: S. Main St & 8th St/W Entrance Rd

	-	•	←	•	1	†	-	Ţ	
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	9	2	18	33	3	331	95	155	
v/c Ratio	0.05	0.01	0.09	0.06	0.01	0.62	0.22	0.20	
Control Delay	28.2	0.0	28.4	0.2	15.7	23.2	9.2	9.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.2	0.0	28.4	0.2	15.7	23.2	9.2	9.1	
Queue Length 50th (ft)	3	0	6	0	1	95	17	28	
Queue Length 95th (ft)	17	0	25	1	6	184	38	59	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	329	400	769	601	977	1328	493	1566	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.01	0.02	0.05	0.00	0.25	0.19	0.10	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 10: S. Main St & 8th St/W Entrance Rd

Base + B AM 10/22/2014

	•	-	•	•	—	•	•	†	~	\	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्स	7		4	7	7	1		7	1	
Volume (veh/h)	1	7	2	16	1	30	3	198	107	87	142	1
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	184.8	166.7	190.0	178.7	190.0	184.5	162.5	190.0
Adj Flow Rate, veh/h	1	8	2	17	1	33	3	215	116	95	154	1
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	14	0	7	7	3	17	17
Cap, veh/h	20	159	153	158	9	235	492	311	168	375	757	5
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.28	0.28	0.28	0.07	0.47	0.47
Sat Flow, veh/h	210	1680	1615	1666	98	1417	1251	1093	590	1757	1613	10
Grp Volume(v), veh/h	9	0	2	18	0	33	3	0	331	95	0	155
Grp Sat Flow(s), veh/h/ln	1890	0	1615	1764	0	1417	1251	0	1683	1757	0	1624
Q Serve(q_s), s	0.2	0.0	0.1	0.5	0.0	1.0	0.1	0.0	9.2	1.8	0.0	3.0
Cycle Q Clear(g_c), s	0.2	0.0	0.1	0.5	0.0	1.0	0.1	0.0	9.2	1.8	0.0	3.0
Prop In Lane	0.11		1.00	0.94		1.00	1.00		0.35	1.00		0.01
Lane Grp Cap(c), veh/h	179	0	153	167	0	235	492	0	479	375	0	762
V/C Ratio(X)	0.05	0.00	0.01	0.11	0.00	0.14	0.01	0.00	0.69	0.25	0.00	0.20
Avail Cap(c_a), veh/h	358	0	306	836	0	772	1204	0	1436	582	0	1877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	21.6	21.8	0.0	18.8	13.5	0.0	16.8	11.6	0.0	8.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.3	0.0	0.0	1.8	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.3	0.0	0.4	0.0	0.0	4.5	0.9	0.0	1.3
LnGrp Delay(d),s/veh	21.8	0.0	21.7	22.1	0.0	19.1	13.5	0.0	18.6	11.9	0.0	8.3
LnGrp LOS	С		С	С		В	В		В	В		А
Approach Vol, veh/h		11			51			334			250	
Approach Delay, s/veh		21.8			20.1			18.6			9.7	
Approach LOS		С			С			В			Α	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		11.0	9.8	21.0		11.0		30.8				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (g_c+I1), s		3.0	3.8	11.2		2.2		5.0				
Green Ext Time (p_c), s		0.1	0.1	3.5		0.0		3.7				
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			В									

FASTC 2018 Base + B AM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 1

FASTC 2018 Base + B AM Int 1-10.syn Cardno GS

Base + B AM

Queues 11: S. Main St & Church St

10/22/2014

	۶	•	1	†	ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	10	104	98	134	130	22
v/c Ratio	0.03	0.21	0.12	0.08	0.17	0.03
Control Delay	13.0	3.1	2.6	2.0	11.1	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	3.1	2.6	2.0	11.1	6.5
Queue Length 50th (ft)	1	0	0	0	12	0
Queue Length 95th (ft)	12	15	23	29	64	13
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1306	839	1042	1727	1629	1578
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.12	0.09	0.08	0.08	0.01
Intersection Summary						

HCM 2010 Signalized Intersection Summary 11: S. Main St & Church St

Base + B AM 10/22/2014

	•	•	•	†	+	4		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	ሻ	7"	7	†	^	7"		
Volume (veh/h)	9	96	90	123	120	20		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	171.2	172.7	179.2	172.7	166.7	190.0		
Adj Flow Rate, veh/h	10	104	98	134	130	22		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	11	10	6	10	14	0		
Cap, veh/h	219	327	590	898	432	419		
Arrive On Green	0.13	0.13	0.09	0.52	0.26	0.26		
Sat Flow, veh/h	1630	1468	1707	1727	1667	1615		
Grp Volume(v), veh/h	10	104	98	134	130	22		
Grp Sat Flow(s),veh/h/ln	1630	1468	1707	1727	1667	1615		
Q Serve(q_s), s	0.2	2.1	1.3	1.4	2.2	0.4		
Cycle Q Clear(g_c), s	0.2	2.1	1.3	1.4	2.2	0.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	219	327	590	898	432	419		
V/C Ratio(X)	0.05	0.32	0.17	0.15	0.30	0.05		
Avail Cap(c_a), veh/h	1174	1186	1177	3034	1920	1860		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.1	11.3	6.8	4.3	10.3	9.7		
Incr Delay (d2), s/veh	0.1	0.7	0.1	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	1.8	0.6	0.7	1.0	0.2		
LnGrp Delay(d),s/veh	13.2	12.0	6.9	4.4	10.5	9.7		
LnGrp LOS	В	В	Α	Α	В	Α		
Approach Vol, veh/h	114			232	152			
Approach Delay, s/veh	12.1			5.4	10.4			
Approach LOS	В			Α	В			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.1		10.7	9.1	15.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		61.0		25.0	15.0	40.0		
Max Q Clear Time (g_c+l1), s		3.4		4.1	3.3	4.2		
Green Ext Time (p_c), s		1.1		0.4	0.2	1.1		
Intersection Summary								
HCM 2010 Ctrl Delay			8.5					
HCM 2010 LOS			Α					

FASTC 2018 Base + B AM Int 11-18.syn Cardno GS Synchro 8 Light Report Page 1 FASTC 2018 Base + B AM Int 11-18.syn Cardno GS

Storage Cap Reductn Reduced v/c Ratio

Intersection Summary

Base + B AM

10/22/2014

	•	-	•	-	Ī	-	¥
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	8	19	20	33	144	109	145
v/c Ratio	0.02	0.05	0.05	0.09	0.32	0.23	0.20
Control Delay	26.6	26.2	25.2	12.8	23.8	13.7	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	26.2	25.2	12.8	23.8	13.7	13.0
Queue Length 50th (ft)	3	7	7	2	49	29	38
Queue Length 95th (ft)	15	25	26	24	101	58	74
Internal Link Dist (ft)		598		847	888		606
Turn Bay Length (ft)	100		150			100	
Base Capacity (vph)	474	496	949	823	1039	611	1467
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0

HCM 2010 Signalized Intersection Summary 12: N. Main St & Dinwiddie Ave

Base + B AM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4		ř	4		7	1		ň	1	
Volume (veh/h)	7	17	1	18	5	26	0	99	33	100	122	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	176.5	190.0	190.0	175.1	190.0	182.7	171.2	190.0
Adj Flow Rate, veh/h	8	18	1	20	5	28	0	108	36	109	133	12
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	311	307	17	224	29	162	113	295	98	474	653	59
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.00	0.23	0.23	0.09	0.42	0.42
Sat Flow, veh/h	1810	1783	99	1810	233	1303	1263	1258	419	1740	1547	140
Grp Volume(v), veh/h	8	0	19	20	0	33	0	0	144	109	0	145
Grp Sat Flow(s),veh/h/ln	1810	0	1883	1810	0	1535	1263	0	1677	1740	0	1687
Q Serve(g_s), s	0.2	0.0	0.5	0.6	0.0	1.2	0.0	0.0	4.6	2.7	0.0	3.5
Cycle Q Clear(g_c), s	0.2	0.0	0.5	0.6	0.0	1.2	0.0	0.0	4.6	2.7	0.0	3.5
Prop In Lane	1.00		0.05	1.00		0.85	1.00		0.25	1.00		0.08
Lane Grp Cap(c), veh/h	311	0	324	224	0	190	113	0	394	474	0	712
V/C Ratio(X)	0.03	0.00	0.06	0.09	0.00	0.17	0.00	0.00	0.37	0.23	0.00	0.20
Avail Cap(c_a), veh/h	425	0	442	849	0	721	508	0	918	719	0	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.0	0.0	22.1	24.8	0.0	25.1	0.0	0.0	20.5	14.4	0.0	11.7
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.2	0.0	0.6	0.0	0.0	0.8	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.3	0.3	0.0	0.6	0.0	0.0	2.2	1.3	0.0	1.7
LnGrp Delay(d),s/veh	22.0	0.0	22.2	25.0	0.0	25.7	0.0	0.0	21.3	14.5	0.0	11.9
LnGrp LOS	С		С	С		С			С	В		В
Approach Vol, veh/h		27			53			144			254	
Approach Delay, s/veh		22.2			25.4			21.3			13.0	
Approach LOS		С			С			С			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		17.0	12.0	21.0		13.9		33.0				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (g_c+I1), s		2.5	4.7	6.6		3.2		5.5				
Green Ext Time (p_c), s		0.1	0.1	2.6		0.3		2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			17.4									
HCM 2010 LOS			В									

FASTC 2018 Base + B AM Int 11-18.syn
Cardno GS
Synchro 8 Light Report
Page 3

FASTC 2018 Base + B AM Int 11-18.syn Cardno GS

Intersection Int Delay, s/veh	1.3							
ini belay, siven	1.3							
Movement	EBL		EBR	N	BL	NBT	SBT	SBF
Vol, veh/h	0		25		7	47	148	C
Conflicting Peds, #/hr	0		0		0	0	0	0
Sign Control	Stop		Stop	Fr	ee	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-			-
Veh in Median Storage, #	0		-		-	0	0	-
Grade, %	0		-		-	0	0	-
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	2		2		2	2	2	2
Mvmt Flow	0		27		8	51	161	0
Major/Minor	Minor2			Majo			Major2	
Conflicting Flow All	227		161	1	61	0		0
Stage 1	161		-		-	-	-	-
Stage 2	66		-		-	-		-
Critical Hdwy	6.42		6.22	4.	12	-	-	-
Critical Hdwy Stg 1	5.42		-		-	-		-
Critical Hdwy Stg 2	5.42		-		-	-	-	-
Follow-up Hdwy	3.518		3.318	2.2	18	-		
Pot Cap-1 Maneuver	761		884	14	18	-	-	-
Stage 1	868		-		-	-		-
Stage 2	957		-		-	-	-	
Platoon blocked, %						-		
Mov Cap-1 Maneuver	756		884	14	18	-	-	-
Mov Cap-2 Maneuver	756		-		-	-	-	-
Stage 1	868		-		-	-	-	-
Stage 2	951		-		-	-		-
Approach	EB			1	NB		SB	
HCM Control Delay, s	9.2				1		0	
HCM LOS	А							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT SI	BR			
Capacity (veh/h)	1418	-	884	-	-			
HCM Lane V/C Ratio	0.005	-	0.031	-	-			
HCM Control Delay (s)	7.6	0	9.2	-	-			
HCM Lane LOS	A	Α	Α	-	-			
HCM 95th %tile Q(veh)	0	-	0.1	-	-			
HOW 70th 70the Q(Verl)	· ·		0.1					

0.2

HCM 95th %tile Q(veh)

Int Delay, s/veh	0.4							
in boldy, siven	0.1							
Movement	EBL		EBR		NBL	NBT	SBT	SBF
Vol, veh/h	8		0		0	49	152	14
Conflicting Peds, #/hr	0		0		0	0	0	(
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	
Veh in Median Storage, #	0		-		-	0	0	
Grade, %	0		-		-	0	0	
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	2		2		2	2	2	2
Mvmt Flow	9		0		0	53	165	15
Major/Minor	Minor2			M	lajor1		Major2	
Conflicting Flow All	226		173		180	0		C
Stage 1	173		-		-	-		
Stage 2	53		-			-		
Critical Hdwy	6.42		6.22		4.12	-	-	
Critical Hdwy Stg 1	5.42		-		-	-	-	
Critical Hdwy Stg 2	5.42		-		-	-		
Follow-up Hdwy	3.518		3.318	2	2.218	-		
Pot Cap-1 Maneuver	762		871		1396	-		
Stage 1	857		-		-	-		
Stage 2	970		-		-	-		
Platoon blocked, %						-		
Mov Cap-1 Maneuver	762		871		1396	-	-	
Mov Cap-2 Maneuver	762		-		-	-		
Stage 1	857		-		-	-	-	
Stage 2	970		-		-	-		
Approach	EB				NB		SB	
HCM Control Delay, s	9.8				0		0	
HCM LOS	A							
Minor Lano/Major Mumt	NBL	NDT	EBLn1	SBT	SBR			
Minor Lane/Major Mvmt		NBT						
Capacity (veh/h)	1396	-	762	-	-			
HCM Lane V/C Ratio	-	-	0.011	-	-			
HCM Control Delay (s)	0	-	9.8	-	-			
HCM Lane LOS	A	-	A	-	-			
HCM 95th %tile Q(veh)	0	-	0	-	-			

SBT 1 0 Free - 0 0 92	SBR 0 0 Free None
1 0 Free - - 0 0	0 0 Free
0 Free - - 0 0	0 Free
Free - 0 0	Free
- 0 0	
0	None -
0	-
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Int Delay, s/veh			
y,			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	5
Major/Minor	Major2		
Conflicting Flow All	87	0	0
	- 07		-
Stage 1		-	
Stage 2	- 4.40	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1509	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1509	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
ű			
	CD		
Approach	SB		
HCM Control Delay, s	0		
HCM LOS			

Minor Lane/Major MVMt

1616

0

Capacity (veh/h)

HCM Lane LOS HCM 95th %tile Q(veh)

HCM Lane V/C Ratio

HCM Control Delay (s)

Base + B PM 10/2/2014

Intersection											
Int Delay, s/veh	10.1										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBI
Vol, veh/h	7	113	18		207	170	6		48	35	35
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	
Sign Control	Free	Free	Free		Free	Free	Free		Stop	Stop	Sto
RT Channelized	-	-	None		-	-	None		-	-	Non
Storage Length	125	-	50		100	-	100		-	-	
Veh in Median Storage, #	-	0	-		-	0	-		-	2	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		96	96	96		93	93	9
Heavy Vehicles, %	0	18	31		11	20	0		8	3	
Mvmt Flow	8	123	20		216	177	6		52	38	38
Major/Minor	Major1			M	lajor2				Minor1		
Conflicting Flow All	177	0	0		123	0	0		669	746	6
Stage 1		-	-			-	-		138	138	
Stage 2	-	-	-		-	-	-		531	608	
Critical Hdwy	4.1	-	-		4.32	-	-		7.66	6.56	
Critical Hdwy Stg 1	-	-	-		-	-	-		6.66	5.56	
Critical Hdwy Stg 2		-	-			-	-		6.66	5.56	
Follow-up Hdwy	2.2	-	-		2.31	-	-		3.58	4.03	3.3
Pot Cap-1 Maneuver	1411				1398	-			332	338	98
Stage 1		-	-		-	-	-		834	779	
Stage 2					-	-			485	482	
Platoon blocked, %		-	-			-	-				
Mov Cap-1 Maneuver	1411	-			1398	-			275	284	982
Mov Cap-2 Maneuver	-	-	-		-	-	-		353	375	
Stage 1	-	-	-		-	-	-		829	775	
Stage 2	-	-	-		-	-			383	408	
Approach	EB				WB				NB		
HCM Control Delay, s	0.4				4.3				17.9		
HCM LOS									С		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT		WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	741	1411	-		1398	-	-	425			
HCM Lane V/C Ratio	0.634	0.005	-	- (0.154	-	-	0.079			
HCM Control Delay (s)	17.9	7.6	-	-	8	-	-	14.2			
HCM Long LOC	C	Λ.			Λ			D.			

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	2	21	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	2	-
Grade, %		0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	0	5	13
Mvmt Flow	2	23	9
Major/Minor	Minor2		
Conflicting Flow All	703	746	89
Stage 1	608	608	-
Stage 2	95	138	-
Critical Hdwy	7.5	6.6	7.16
Critical Hdwy Stg 1	6.5	5.6	-
Critical Hdwy Stg 2	6.5	5.6	-
Follow-up Hdwy	3.5	4.05	3.43
Pot Cap-1 Maneuver	328	335	917
Stage 1	454	477	
Stage 2	907	774	-
Platoon blocked, %			
Mov Cap-1 Maneuver	163	282	917
Mov Cap-2 Maneuver	273	369	-
Stage 1	451	403	-
Stage 2	525	770	-
Approach	SB		
HCM Control Delay, s	14.2		
HCM LOS	В		
Minor Lane/Major Mvmt			
IVIIIIOI Lanenviajoi IVIVIIII			

HCM Lane LOS HCM 95th %tile Q(veh) Intersection

HCM 2010 TWSC 3: Military Rd & Darvills Rd

Intersection											
Int Delay, s/veh	6.6										
Movement	EBL	EBT	EBR	WE	3L	WBT	WBR		NBL	NBT	NB
Vol, veh/h	9	44	14		8	58	144		62	128	1
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	
Sign Control	Free	Free	Free	Fre	ee	Free	Free		Stop	Stop	Sto
RT Channelized	-	-	None		-	-	None		-		Non
Storage Length	-	-	50		-	-	-		150	-	2
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92	Ç	92	92	92		92	92	9
Heavy Vehicles, %	0	5	20	2	23	15	25		2	5	
Mvmt Flow	10	48	15		9	63	157		67	139	1
Major/Minor	Major1			Majo	rγ				Minor1		
Conflicting Flow All	220	0	0		12 48	0	0		237	304	4
	220	-	-	2	- 0	-	-		67	67	4
Stage 1		-	-		-					237	
Stage 2	4.1			4.3	-	-			170	6.55	6.2
Critical Hdwy	4.1			4.3	33	-	-		7.12 6.12	5.55	0.2
Critical Hdwy Stg 1	-	-	-		-						
Critical Hdwy Stg 2	2.2	-		2.40	7				6.12 3.518	5.55 4.045	3.30
Follow-up Hdwy	1361	-	-	2.40			-		717	604	102
Pot Cap-1 Maneuver	1301			143	50					833	102
Stage 1	•	-	-		-	-	-		943	703	
Stage 2			-		-		-		832	/03	
Platoon blocked, %	10/1		-	147					/00	FOF	100
Mov Cap-1 Maneuver	1361		-	143	00		-		690	595 595	102
Mov Cap-2 Maneuver		-			-		-		690 935	595 826	
Stage 1		-			-	-	-				
Stage 2		•	-			-	-		803	698	
Approach	EB			W	/B				NB		
HCM Control Delay, s	1			0	.3				12		
HCM LOS									В		
Minor Lane/Major Mumt	NBLn1	NBLn2	NBLn3	EBL EE)T	EBR	WBL	WBT	WBR	SBLn1	
Minor Lane/Major Mvmt		NBLN2 595		1361			1435			489	
Capacity (veh/h)	690 0.098	0.234	1024 0.015	0.007	-	-	0.006	-	-	0.184	
HCM Cantral Dalay (a)					-	-		-			
HCM Control Delay (s)	10.8	12.9	8.6	7.7	0 A	-	7.5	0	-	14	
HCM Lane LOS	В	В	A	A		-	A	А		B	
HCM 95th %tile Q(veh)	0.3	0.9	0	0	-	-	0	-	-	0.7	

5.7							
	FBT	FBR	WF	31	WBT	NBI	NBR
							279
		_	•	0		0	0
			Fre	-		-	Stop
	-			-		-	None
	-	-			-	0	-
	0	-			0	0	
	0	-		-	0	0	-
	92	92	Ç	92	92	92	92
	7	0	2	28	8	0	5
	171	2	8	39	179	1	303
N	lajor1					Minor1	
	0	0	17	73	0		172
	-	-		-	-	172	-
	-	-		-	-	358	-
	-	-	4.3	38	-	6.4	6.25
	-	-		-	-		-
	-	-		-	-		-
	-	-			-		3.345
	-	-	126	51	-		864
	-	-		-	-		-
	-	-		-	-	712	-
	-	-			-		
	-	-	126	51	-		864
	-	-		-	-		-
	-	-		-	-		-
	-	-		-	-	656	-
	ED		١٨	ID		ND	
	U			. /			
						<u>D</u>	
NBLn1	EBT	EBR	WBL WE	BT.			
861	-	-	1261				
0.353	-	-	0.071	-			
11.5	-	-	8.1	0			
В	-	-	Α	Α			
1.6	-	-	0.2	-			
	NBLn1 861 0.353 11.5 B	EBT 157 0 Free - -	EBT EBR 157 2 0 0 0 Free Free - None 0 - 0 0 - 171 2 2 2 2 2 7 0 171 2 2 2 2 2 2 2 2 2	EBT EBR WE	EBT EBR WBL 157 2 82 0 0 0 0 0 0 0 0 0	EBT EBR WBL WBT	EBT EBR WBL WBT NBL

FASTC 2018 Base + B PM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 3

FASTC 2018 Base + B PM Int 1-10.syn Cardno GS

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol. veh/h	62	11	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	310p	Siup -	None
Storage Length		-	None -
Veh in Median Storage, #	-	0	
Grade, %		0	
	-	92	-
Peak Hour Factor	92		92
Heavy Vehicles, %	64	23	0
Mvmt Flow	67	12	11
Major/Minor	Minor2		
Conflicting Flow All	296	226	141
Stage 1	159	159	-
Stage 2	137	67	-
Critical Hdwy	7.74	6.73	6.2
Critical Hdwy Stg 1	6.74	5.73	-
Critical Hdwy Stg 2	6.74	5.73	-
Follow-up Hdwy	4.076	4.207	3.3
Pot Cap-1 Maneuver	550	638	912
Stage 1	717	728	
Stage 2	738	800	
Platoon blocked, %	730	000	
Mov Cap-1 Maneuver	439	628	912
Mov Cap-1 Maneuver	439	628	712
Stage 1	711	723	-
	600	794	
Stage 2	000	194	•
Approach	SB		
HCM Control Delay, s	14		
HCM LOS	В		
Minor Lane/Major Mvmt			
WILLOU EQUE/INIQUE INIVITIE			

lata-a-a-tia-a											
Intersection	5.6										
Int Delay, s/veh	5.0										
Movement	EBL	EBT	EBR		WBL	WBT	WBR		NBL	NBT	NBR
Vol. veh/h	3	0	1		69	0	75		0	81	8
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop		Free	Free	Free
RT Channelized		-	None		-		None		-	-	None
Storage Length	-	-	-		-	-	-		-	-	-
Veh in Median Storage, #	-	0	-		-	0	-		-	0	
Grade, %	-	0	-		-	0	-		-	0	
Peak Hour Factor	92	92	92		92	92	92		92	92	92
Heavy Vehicles, %	5	0	5		2	0	4		27	1	2
Mvmt Flow	3	0	1		75	0	82		0	88	9
Major/Minor	Minor2				Minor1				Major1		
Conflicting Flow All	230	194	47		189	189	92		47	0	0
Stage 1	97	97	-		92	92	-		-	-	-
Stage 2	133	97	-		97	97	-		-	-	
Critical Hdwy	7.15	6.5	6.25		7.12	6.5	6.24		4.37	-	-
Critical Hdwy Stg 1	6.15	5.5	-		6.12	5.5	-		-	-	-
Critical Hdwy Stg 2	6.15	5.5	-		6.12	5.5	-		-	-	
Follow-up Hdwy	3.545	4	3.345		3.518	4	3.336		2.443	-	-
Pot Cap-1 Maneuver	719	705	1014		771	709	960		1414	-	-
Stage 1	902	819	-		915	823	-		-	-	-
Stage 2	863	819	-		910	819	-		-	-	
Platoon blocked, %										-	-
Mov Cap-1 Maneuver	648	692	1014		759	696	960		1414	-	-
Mov Cap-2 Maneuver	648	692	-		759	696	-		-	-	-
Stage 1	902	803	-		915	823	-		-	-	-
Stage 2	790	819	-		892	803	-		-	-	-
Approach	EB				WB				NB		
HCM Control Delay, s	10.1				10.2				0		
HCM LOS	В				В						
Minor Love (Maior May 1	ND	NDT	NDD	EDI -4	WDI =4	CDI	CDT	CDD			
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1414	-	-	712	852	1369	-	-			
HCM Lane V/C Ratio	-	-	-	0.006	0.184	0.018	-	-			
HCM Control Delay (s)	0	-	-	10.1	10.2	7.7	0	-			
HCM Lane LOS HCM 95th %tile Q(veh)	A 0	-	-	B 0	B 0.7	0.1	Α	-			
				Λ.				_			

Internal Control			
Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	23	43	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #		0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	24	3	27
Mymt Flow	25	47	0
WWW.Tiow	20	- 17	
Major/Minor	Major2		
Conflicting Flow All	97	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1369	-	-
Stage 1	-	-	-
Stage 2	-		
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1369		
Mov Cap-2 Maneuver	-		-
Stage 1			-
Stage 2	-		-
Stuge 2			
Approach	SB		
HCM Control Delay, s	2.7		
HCM LOS	2.7		
Minor Lane/Major Mvmt			

Intersection								
Int Delay, s/veh	2.8							
Movement	EBL		EBR		NBL	NBT	SBT	SBR
Vol, veh/h	13		25		56	76	29	84
Conflicting Peds, #/hr	0		0		0	0	0	0
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	-
Veh in Median Storage, #	0		-		-	0	0	-
Grade, %	0		-		-	0	0	-
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	3		2		1	1	1	1
Mvmt Flow	14		27		61	83	32	91
Major/Minor	Minor2				Major1		Major2	
Major/Minor			77		Major1		IVIdJUI Z	
Conflicting Flow All	281		77		123	0		0
Stage 1	77		-		-	-	-	
Stage 2	204				-	-	•	-
Critical Hdwy	6.43		6.22		4.11	-	-	-
Critical Hdwy Stg 1	5.43		-		-	-		-
Critical Hdwy Stg 2	5.43		- 0.010			-	-	-
Follow-up Hdwy	3.527		3.318		2.209	-	•	-
Pot Cap-1 Maneuver	707		984		1470	-	-	-
Stage 1	943		-		-	-		-
Stage 2	828		-		-	-	-	-
Platoon blocked, %					4.170	-	•	-
Mov Cap-1 Maneuver	677		984		1470	-	-	-
Mov Cap-2 Maneuver	677		-		-	-	-	-
Stage 1	943		-		-	-		-
Stage 2	792		-		-	-	•	-
Approach	EB				NB		SB	
HCM Control Delay, s	9.4				3.2		0	
HCM LOS	А							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
	1470	IND I	852	301	JDK -			
Capacity (veh/h)	0.041		0.048	-				
HCM Lane V/C Ratio HCM Control Delay (s)	7.6	- 0	9.4					
HCM Lane LOS	7.6 A	A	9.4 A	-	-			
	0.1	Α -	0.2	-				
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-			

2.1

EBL

0

Free

85

2

Maior1

102

4.12

2.218

1490

1490

EBT

39

0

0

92

42

0

Free

EBR

Free

None

92

0

0

0

93

Free

0

0

92

2

101

0

0

Free

None

85

2

0

0

Free

92

0

Major2

50

4.1

2.2

1570

1570

Intersection
Int Delay, s/veh

Movement

Vol, veh/h

Grade, % Peak Hour Factor

Mvmt Flow

Major/Minor

Critical Hdwy

Sign Control

RT Channelized

Storage Length Veh in Median Storage, #

Heavy Vehicles, %

Conflicting Flow All

Stage 1

Stage 2

Critical Hdwy Stg 1 Critical Hdwy Stg 2

Pot Cap-1 Maneuver

Stage 1

Stage 2

Platoon blocked, % Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

Follow-up Hdwy

Conflicting Peds, #/hr

Base + B PM 10/2/2014

NBT

0

0

85 92

2

153

49

104

6.52

5.52

739

809

738 1029

738

853

808

Stop Stop

0

0

46

6.2

3.3

1029

None

29

0

92

4

32

Minor1

156

49

107

7.14

6.14

6.14 5.52

806

959 854

894

799

799

958

886

3.536 4.018

Stop

HCM 2010 TWSC
6: Garnett Ave & Military Rd

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol. veh/h	0	2	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	310p	Stup -	None
Storage Length		-	-
Veh in Median Storage, #		0	
Grade, %		0	
Peak Hour Factor	85	85	85
Heavy Vehicles, %	2	2	2
Mymt Flow	0	2	5
WWW. I IOW	0	2	J
Major/Minor	Minor2		
Conflicting Flow All	154	156	102
Stage 1	104	104	-
Stage 2	50	52	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	813	736	953
Stage 1	902	809	-
Stage 2	963	852	-
Platoon blocked, %			
Mov Cap-1 Maneuver	810	735	953
Mov Cap-2 Maneuver	810	735	-
Stage 1	901	808	-
Stage 2	960	851	-
Approach	SB		
HCM Control Delay, s	9.2		
HCM LOS	Α.Δ		
	- 7		

Approach	EB				WB				NB	
HCM Control Delay, s	0.2				0.1				9.7	
HCM LOS									Α	
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	802	1490	-	-	1570	-	-	867		
HCM Lane V/C Ratio	0.042	0.001	-	-	0.001	-	-	0.008		
HCM Control Delay (s)	9.7	7.4	0	-	7.3	0	-	9.2		
HCM Lane LOS	Α	Α	Α	-	Α	Α	-	Α		
HCM 95th %tile Q(veh)	0.1	0			0			0		

Minor Lane/Major Mvmt

HCM Control Delay (s)

HCM Lane LOS HCM 95th %tile Q(veh) Minor Lane/Major Mvmt

Intersection											
Int Delay, s/veh	1.1										
Movement	EBL	EBT	EBR	WB		WBT	WBR	NI	וו	NBT	NBR
Vol, veh/h	1	35	3		0	81	0		14	0	INDIA (
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0
Sign Control	Free	Free	Free	Fre		Free	Free	St	-	Stop	
RT Channelized	riee -	riee -	None	rie	е -	riee -	None	30	op -	Stop -	Stop None
Storage Length			None				None		-	-	NOHE
Veh in Median Storage, #		0	-			0				0	
Grade, %		0				0			-	0	-
Peak Hour Factor	85	92	92	9	- ว	92	85		92	85	92
	2	92	92		0	2	2		92 1	2	
Heavy Vehicles, %	1	38	3		0	88	0		1 15	0	0
Mvmt Flow	ı	38	3		U	88	U		15	U	0
Major/Minor	Moior1			Major	า			Mino	-1		
Major/Minor	Major1			Major						100	- 10
Conflicting Flow All	88	0	0	4		0	0		31	130	40
Stage 1	-	-	-		-	-	-		42	42	
Stage 2	-	-	-		-	-	-		89	88	-
Critical Hdwy	4.12	-	-	4.	1	-	-	7.		6.52	6.2
Critical Hdwy Stg 1	-	-	-		-	-	-	6.		5.52	-
Critical Hdwy Stg 2	-	-	-		-	-	-	6.		5.52	-
Follow-up Hdwy	2.218	-	-	2.		-	-	3.50		4.018	3.3
Pot Cap-1 Maneuver	1508	-	-	158	1	-	-		44	761	1037
Stage 1	-	-	-		-	-	-		75	860	-
Stage 2	-	-	-		-	-	-	9:	21	822	-
Platoon blocked, %		-	-			-	-	_			
Mov Cap-1 Maneuver	1508	-	-	158	1	-	-		42	760	1037
Mov Cap-2 Maneuver	-	-	-		-	-	-		42	760	-
Stage 1	-	-	-		-	-	-		74	859	-
Stage 2	•	-	-		-	-	-	92	20	822	-
Approach	EB			W	В			N	ΙB		
HCM Control Delay, s	0.2				0				0.4		
HCM LOS	0.2							,	A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR WB		WBT	WBR	SBLn1			
Capacity (veh/h)	842	1508	-	- 158	1	-	-	970			
HCM Lane V/C Ratio	0.018	0.001	-	-	-	-	-	0.001			
HCM Control Dolay (c)	0.4	7.4	٥		Λ			0.7			

0

Intersection			
Int Delay, s/veh			
int belay, siven			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	1
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	85	85	85
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	1
Major/Minor	Minor2		
		100	00
Conflicting Flow All	130	132	88
Stage 1	88	88	-
Stage 2	42	44	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	843	759	970
Stage 1	920	822	-
Stage 2	972	858	-
Platoon blocked, %			
Mov Cap-1 Maneuver	842	758	970
Mov Cap-2 Maneuver	842	758	-
Stage 1	919	822	-
Stage 2	971	857	
Approach	SB		
	8.7		
HCM Control Dolay c			
HCM Control Delay, s HCM LOS	Α.7		

9.4 7.4

Platoon blocked, %					-	-
Mov Cap-1 Maneuver	947	1079	1613	-	-	-
Mov Cap-2 Maneuver	947	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	8.8		7.2		0	
HCM LOS	А					

1613

1079

948

953 960

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1613	-	964	-	-
HCM Lane V/C Ratio	0.001	-	0.008	-	-
HCM Control Delay (s)	7.2	0	8.8	-	-
HCM Lane LOS	A	Α	Α	-	-
HCM 95th %tile O(veh)	0		0		

Intersection								
Int Delay, s/veh	0.3							
Movement	EBL	EBT			WBT	WBR	SBL	SBF
Vol, veh/h	1	27			103	2	1	3
Conflicting Peds, #/hr	0	0			0	0	0	(
Sign Control	Free	Free			Free	Free	Stop	Stop
RT Channelized	-	None			-	None	-	None
Storage Length	-	-			-	-	0	
Veh in Median Storage, #	-	0			0	-	0	
Grade, %	-	0			0	-	0	
Peak Hour Factor	92	92			92	92	92	92
Heavy Vehicles, %	0	22			3	5	23	(
Mvmt Flow	1	29			112	2	1	3
Major/Minor	Major1				Major2		Minor2	
Conflicting Flow All	114	0			-	0	145	113
Stage 1	-	-			-	-	113	
Stage 2	-	-			-	-	32	
Critical Hdwy	4.1	-			-	-	6.63	6.2
Critical Hdwy Stg 1	-	-			-	-	5.63	
Critical Hdwy Stg 2	-	-			-	-	5.63	
Follow-up Hdwy	2.2	-			-	-	3.707	3.3
Pot Cap-1 Maneuver	1488	-			-	-	800	945
Stage 1	-	-			-	-	862	
Stage 2	-	-			-	-	939	
Platoon blocked, %		-			-	-		
Mov Cap-1 Maneuver	1488	-			-	-	799	945
Mov Cap-2 Maneuver	-	-			-	-	799	
Stage 1	-	-			-	-	862	
Stage 2	-	-			-	-	938	
Approach	EB				WB		SB	
HCM Control Delay, s	0.3				0		9	
HCM LOS							A	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR SBL	n1			

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1488	-	-	-	904	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Control Delay (s)	7.4	0	-	-	9	
HCM Lane LOS	Α	Α	-	-	Α	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Stage 1

Stage 2

Base + B PM 10/22/2014

10: S. Main St & 8th St/W Entrance Rd

	-	•	—	•	•	†	-	ţ	
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	10	16	172	100	4	525	57	431	
v/c Ratio	0.07	0.06	0.55	0.17	0.01	0.78	0.21	0.47	
Control Delay	43.7	0.5	40.8	6.1	17.5	31.6	11.7	14.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.7	0.5	40.8	6.1	17.5	31.6	11.7	14.4	
Queue Length 50th (ft)	5	0	79	0	1	223	13	123	
Queue Length 95th (ft)	24	0	174	36	8	406	35	230	
Internal Link Dist (ft)	750		1085			929		1030	
Turn Bay Length (ft)		50		225	75		175		
Base Capacity (vph)	229	343	601	635	593	1084	332	1415	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.05	0.29	0.16	0.01	0.48	0.17	0.30	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 10: S. Main St & 8th St/W Entrance Rd

Base + B PM 10/22/2014

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्स	7		4	7	7	1		Ŋ.	1	
Volume (veh/h)	1	8	15	137	21	92	4	384	99	54	404	6
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	170.1	190.0	190.0	185.5	172.7	190.0	182.7	190.0	165.2	182.8	190.0
Adj Flow Rate, veh/h	1	9	16	149	23	100	4	417	108	57	425	6
Adj No. of Lanes	0	1	1	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	13	13	0	5	5	10	0	4	4	15	4	4
Cap, veh/h	12	110	117	214	33	274	476	550	143	285	950	13
Arrive On Green	0.07	0.07	0.07	0.14	0.14	0.14	0.39	0.39	0.39	0.05	0.53	0.53
Sat Flow, veh/h	169	1523	1615	1541	238	1468	972	1400	363	1573	1798	25
Grp Volume(v), veh/h	10	0	16	172	0	100	4	0	525	57	0	431
Grp Sat Flow(s),veh/h/ln	1693	0	1615	1778	0	1468	972	0	1763	1573	0	1823
Q Serve(g_s), s	0.4	0.0	0.6	6.4	0.0	4.1	0.2	0.0	17.8	1.4	0.0	10.1
Cycle Q Clear(g_c), s	0.4	0.0	0.6	6.4	0.0	4.1	0.9	0.0	17.8	1.4	0.0	10.1
Prop In Lane	0.10		1.00	0.87		1.00	1.00		0.21	1.00		0.01
Lane Grp Cap(c), veh/h	123	0	117	247	0	274	476	0	693	285	0	963
V/C Ratio(X)	0.08	0.00	0.14	0.70	0.00	0.36	0.01	0.00	0.76	0.20	0.00	0.45
Avail Cap(c_a), veh/h	245	0	234	644	0	602	727	0	1149	437	0	1611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	30.0	28.3	0.0	24.5	13.2	0.0	18.1	13.1	0.0	10.1
Incr Delay (d2), s/veh	0.3	0.0	0.5	3.5	0.0	8.0	0.0	0.0	1.7	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	3.3	0.0	1.7	0.0	0.0	8.9	0.6	0.0	5.1
LnGrp Delay(d),s/veh	30.2	0.0	30.5	31.9	0.0	25.3	13.2	0.0	19.8	13.4	0.0	10.4
LnGrp LOS	С		С	С		С	В		В	В		В
Approach Vol, veh/h		26			272			529			488	
Approach Delay, s/veh		30.4			29.5			19.8			10.7	
Approach LOS		С			С			В			В	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		15.6	9.3	33.1		11.0		42.5				
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0	10.0	45.0		10.0		61.0				
Max Q Clear Time (g_c+I1), s		8.4	3.4	19.8		2.6		12.1				
Green Ext Time (p_c), s		1.2	0.0	7.4		0.0		8.4				
Intersection Summary												
HCM 2010 Ctrl Delay			18.6									
HCM 2010 LOS			В									

FASTC 2018 Base + B PM Int 1-10.syn
Cardno GS
Synchro 8 Light Report
Page 1

FASTC 2018 Base + B PM Int 1-10.syn Cardno GS

Base + B PM

11: S. Main St & Church St

10/22/2014

	•	•	1	†	ţ	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	47	230	239	253	278	58
v/c Ratio	0.15	0.33	0.29	0.17	0.54	0.11
Control Delay	21.1	2.9	4.0	3.1	19.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	2.9	4.0	3.1	19.3	5.9
Queue Length 50th (ft)	8	0	0	0	44	0
Queue Length 95th (ft)	42	29	56	59	152	22
Internal Link Dist (ft)	1078			751	648	
Turn Bay Length (ft)		150	225			150
Base Capacity (vph)	1054	837	922	1719	1450	1413
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.27	0.26	0.15	0.19	0.04
Intersection Summary						

HCM 2010 Signalized Intersection Summary 11: S. Main St & Church St

Base + B PM 10/22/2014

	۶	•	1	1	↓	4		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	*	7	*	^	^	7		
Volume (veh/h)	43	212	220	233	256	53		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	171.2	172.7	179.2	172.7	166.7	190.0		
Adj Flow Rate, veh/h	47	230	239	253	278	58		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	11	10	6	10	14	0		
Cap, veh/h	308	483	510	919	421	408		
Arrive On Green	0.19	0.19	0.14	0.53	0.25	0.25		
Sat Flow, veh/h	1630	1468	1707	1727	1667	1615		
Grp Volume(v), veh/h	47	230	239	253	278	58		
Grp Sat Flow(s), veh/h/ln	1630	1468	1707	1727	1667	1615		
Q Serve(q_s), s	1.0	5.4	3.9	3.5	6.4	1.2		
Cycle Q Clear(q c), s	1.0	5.4	3.9	3.5	6.4	1.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	308	483	510	919	421	408		
V/C Ratio(X)	0.15	0.48	0.47	0.28	0.66	0.14		
Avail Cap(c_a), veh/h	947	1058	865	2448	1549	1501		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.6	11.5	9.0	5.5	14.4	12.5		
Incr Delay (d2), s/veh	0.3	0.9	0.7	0.1	0.7	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	4.7	1.9	1.6	3.0	0.5		
LnGrp Delay(d),s/veh	14.8	12.4	9.6	5.6	15.1	12.5		
LnGrp LOS	В	В	Α	Α	В	В		
Approach Vol, veh/h	277			492	336			
Approach Delay, s/veh	12.8			7.5	14.7			
Approach LOS	В			Α	В			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.9		14.1	12.0	16.9		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		61.0		25.0	15.0	40.0		
Max Q Clear Time (g_c+l1), s		5.5		7.4	5.9	8.4		
Green Ext Time (p_c), s		2.5		1.1	0.5	2.4		
Intersection Summary								
HCM 2010 Ctrl Delay			11.0					
HCM 2010 LOS			В					

FASTC 2018 Base + B PM Int 11-18.syn
Cardno GS
Synchro 8 Light Report
Page 1

FASTC 2018 Base + B PM Int 11-18.syn Cardno GS

Base + B PM

12: N. Main St & Dinwiddie Ave

10/22/2014

	۶	-	•	←	1	†	-	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	22	31	50	107	8	267	26	296	
v/c Ratio	0.08	0.11	0.17	0.33	0.02	0.47	0.06	0.43	
Control Delay	27.4	22.8	25.9	14.1	17.6	20.3	10.7	14.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.4	22.8	25.9	14.1	17.6	20.3	10.7	14.3	
Queue Length 50th (ft)	6	6	12	7	2	58	5	67	
Queue Length 95th (ft)	30	33	50	54	12	166	18	136	
Internal Link Dist (ft)		598		847		888		606	
Turn Bay Length (ft)	100		150		100		100		
Base Capacity (vph)	541	551	1083	986	760	1180	602	1551	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.06	0.05	0.11	0.01	0.23	0.04	0.19	
Intersection Summary									

HCM 2010 Signalized Intersection Summary 12: N. Main St & Dinwiddie Ave

Base + B PM 10/22/2014

	•	→	•	•	+	•	•	1	~	/	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	1>		**	1>		*	1>		ሻ	1>	
Volume (veh/h)	20	20	8	46	28	71	7	197	49	24	251	21
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	190.0	190.0	190.0	190.0	178.4	190.0	190.0	175.6	190.0	182.7	171.1	190.0
Adj Flow Rate, veh/h	22	22	9	50	30	77	8	214	53	26	273	23
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	7	7	4	12	12
Cap, veh/h	172	122	50	217	53	137	452	389	96	376	688	58
Arrive On Green	0.10	0.10	0.10	0.12	0.12	0.12	0.29	0.29	0.29	0.04	0.44	0.44
Sat Flow, veh/h	1810	1283	525	1810	444	1139	1100	1360	337	1740	1556	131
Grp Volume(v), veh/h	22	0	31	50	0	107	8	0	267	26	0	296
Grp Sat Flow(s),veh/h/ln	1810	0	1807	1810	0	1583	1100	0	1697	1740	0	1688
Q Serve(q_s), s	0.6	0.0	0.8	1.3	0.0	3.3	0.3	0.0	7.0	0.5	0.0	6.2
Cycle Q Clear(q_c), s	0.6	0.0	0.8	1.3	0.0	3.3	0.3	0.0	7.0	0.5	0.0	6.2
Prop In Lane	1.00		0.29	1.00		0.72	1.00		0.20	1.00		0.08
Lane Grp Cap(c), veh/h	172	0	172	217	0	190	452	0	485	376	0	746
V/C Ratio(X)	0.13	0.00	0.18	0.23	0.00	0.56	0.02	0.00	0.55	0.07	0.00	0.40
Avail Cap(c_a), veh/h	517	0	516	1034	0	905	871	0	1131	800	0	1800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	21.9	20.9	0.0	21.8	13.5	0.0	15.9	11.5	0.0	9.9
Incr Delay (d2), s/veh	0.5	0.0	0.7	0.8	0.0	3.7	0.0	0.0	1.4	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	0.7	0.0	1.7	0.1	0.0	3.5	0.2	0.0	3.0
LnGrp Delay(d),s/veh	22.2	0.0	22.6	21.7	0.0	25.5	13.5	0.0	17.3	11.6	0.0	10.4
LnGrp LOS	С		С	С		С	В		В	В		В
Approach Vol, veh/h		53			157			275			322	
Approach Delay, s/veh		22.4			24.3			17.2			10.5	
Approach LOS		C			C			В			В	
							-					
Timer Assigned Phs	1	2	3	4	5	6	7	8				
			8.2	21.0				29.2				
Phs Duration (G+Y+Rc), s		11.0				12.3						
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0	15.0	35.0		30.0		56.0				
Max Q Clear Time (g_c+l1), s		2.8	2.5	9.0		5.3		8.2				
Green Ext Time (p_c), s		0.1	0.0	5.5		1.1		6.2				
Intersection Summary												
HCM 2010 Ctrl Delay			16.2									
HCM 2010 LOS			В									

Synchro 8 Light Report Page 3

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HCM 95th %tile Q(veh)

Int Delay, s/veh	1.1							
in Bolay, aron								
Movement	EBL		EBR		NBL	NBT	SBT	SBR
Vol, veh/h	1		10		20	137	53	C
Conflicting Peds, #/hr	0		0		0	0	0	0
Sign Control	Stop		Stop		Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	-
Veh in Median Storage, #	0		-		-	0	0	
Grade, %	0		-		-	0	0	
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	2		2		2	2	2	2
Mvmt Flow	1		11		22	149	58	0
Major/Minor	Minor2				Major1		Major2	
Conflicting Flow All	250		58		58	0	-	0
Stage 1	58		-		-	-	-	
Stage 2	192		-		-	-	-	
Critical Hdwy	6.42		6.22		4.12	-	-	
Critical Hdwy Stg 1	5.42		-		-	-	-	
Critical Hdwy Stg 2	5.42		-		-	-	-	
Follow-up Hdwy	3.518		3.318		2.218	-	-	-
Pot Cap-1 Maneuver	739		1008		1546	-	-	
Stage 1	965		-		-	-	-	
Stage 2	841		-		-	-	-	
Platoon blocked, %						-	-	
Mov Cap-1 Maneuver	727		1008		1546	-	-	
Mov Cap-2 Maneuver	727		-		-	-	-	
Stage 1	965		-		-	-	-	
Stage 2	828		-		-	-	-	
Approach	EB				NB		SB	
HCM Control Delay, s	8.7				0.9		0	
HCM LOS	А							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	1546	-	974	-	-			
HCM Lane V/C Ratio	0.014	-	0.012	-	-			
HCM Control Delay (s)	7.4	0	8.7	-	-			
HCM Lane LOS	А	Α	Α	-	-			
HCM 95th %tile Q(veh)	0	-	0	-	-			

0.7

Intersection								
Int Delay, s/veh	0.9							
Marramant	EBL		EBR		NBL	NDT	SBT	CDD
Movement Vol, veh/h	21					NBT 141	56	SBR 11
	0		0		0	0	0	0
Conflicting Peds, #/hr					-		-	-
Sign Control	Stop		Stop	ı	Free	Free	Free	Free
RT Channelized	-		None		-	None	-	None
Storage Length	0		-		-	-	-	-
Veh in Median Storage, #	0		-		-	0	0	-
Grade, %	0		-		-	0	0	-
Peak Hour Factor	92		92		92	92	92	92
Heavy Vehicles, %	2		2		2	2	2	2
Mvmt Flow	23		0		0	153	61	12
Major/Minor	Minor2			Ma	ijor1		Major2	
Conflicting Flow All	220		67	1710	73	0	- Indjoin	0
Stage 1	67		-		-	-		-
Stage 2	153							
Critical Hdwy	6.42		6.22		4.12			-
Critical Hdwy Stg 1	5.42		0.22		4.12	- :		
Critical Hdwy Stg 2	5.42							-
Follow-up Hdwy	3.518		3.318	2	.218			
Pot Cap-1 Maneuver	768		997		527			-
	956				527	-		-
Stage 1	956 875					-	-	-
Stage 2 Platoon blocked, %	8/5		-		-		-	-
	7/0		007	1	F27		-	-
Mov Cap-1 Maneuver	768		997		527	-	-	
Mov Cap-2 Maneuver	768		-		-	-	-	
Stage 1	956		-		-	-	-	-
Stage 2	875		-		-	•	-	-
Approach	EB				NB		SB	
HCM Control Delay, s	9.8				0		0	
HCM LOS	A							
Mineral and Maior Manage	NDI	NDT	EDI1	CDT (CDD			
Minor Lane/Major Mvmt	NBL		EBLn1		SBR			
Capacity (veh/h)	1527	-	768		-			
HCM Lane V/C Ratio	-	-	0.03	-	-			
HCM Control Delay (s)	0	-	9.8	-	-			
HCM Lane LOS HCM 95th %tile Q(veh)	A 0	-	A 0.1	-	-			
		-						

Intersection	8.9							
Int Delay, s/veh	8.9							
Movement	EBL		EBR		NBL	NBT	SBT	SB
Vol, veh/h	151		15		0	6	1	
Conflicting Peds, #/hr	0		0		0	0	0	
Sign Control	Stop		Stop		Free	Free	Free	Fre
RT Channelized	-	1	Vone		-	None	-	Non
Storage Length	0		-		-	-	-	
Veh in Median Storage, #	0		-		-	0	0	
Grade, %	0		-		-	0	0	
Peak Hour Factor	92		92		92	92	92	9
Heavy Vehicles, %	2		2		2	2	2	
Mvmt Flow	164		16		0	7	1	
Major/Minor	Minor2			- 1	Major1		Major2	
Conflicting Flow All	8		1		1	0	-	
Stage 1	1		-		-	-	-	
Stage 2	7		-		-	-	-	
Critical Hdwy	6.42		6.22		4.12	-	-	
Critical Hdwy Stg 1	5.42		-		-	-	-	
Critical Hdwy Stg 2	5.42		-		-	-	-	
Follow-up Hdwy	3.518		3.318		2.218	-	-	
Pot Cap-1 Maneuver	1013		1084		1622	-	-	
Stage 1	1022		-		-	-	-	
Stage 2	1016		-		-	-	-	
Platoon blocked, %						-	-	
Mov Cap-1 Maneuver	1013		1084		1622	-	-	
Mov Cap-2 Maneuver	1013		-		-	-	-	
Stage 1	1022		-		-	-	-	
Stage 2	1016		-		-	-		
Approach	EB				NB		SB	
Approach HCM Control Delay, s	9.3				0		<u> </u>	
HCM LOS	9.3 A				U		0	
HCIVI LU3	A							
Minor Lane/Major Mvmt	NBL	NBT E	BLn1	SBT	SBR			
Capacity (veh/h)	1622		1019	-				
HCM Lane V/C Ratio	-).177	-				
HCM Control Delay (s)	0	-	9.3	-				
HCM Lane LOS	Ä		A	-				
HCM 95th %tile Q(veh)	0		0.6					

0.7

EBL

0

Stop

92

2

Minor2

179

2

177 171

7.12

6.12

6.12 5.52

3.518

783

1021

825

772

772

1021

814

EBT

0

0

0

92

2

0

173

2

6.52

5.52

4.018

720 1082

894

757

720 1082

720

894

757

Stop

EBR

0

Stop

None

92

2

2

6.22

3.318

0

0

Stop

92

2

0

Minor1

173

171

7.12

6.12

6.12

790

831

1021

789

789

831

1020

WB

0

0

3.518

0 11

0

0

92

2

0 12

174

171

6.52

5.52 5.52

4.018

719

757

893

719

719

757

893

Stop

0

Stop

None

92

2

6.22

3.318

873

873

Intersection Int Delay, s/veh

Movement

Vol, veh/h

Grade, % Peak Hour Factor

Mvmt Flow

Major/Minor

Critical Hdwy

Sign Control

RT Channelized

Storage Length Veh in Median Storage, #

Heavy Vehicles, %

Conflicting Flow All

Stage 1

Stage 2

Critical Hdwy Stg 1 Critical Hdwy Stg 2

Pot Cap-1 Maneuver

Stage 1

Stage 2

Platoon blocked. % Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

HCM 95th %tile Q(veh)

Approach

Follow-up Hdwy

Conflicting Peds, #/hr

NBT

157

Free Free

0

0

92

2

0

0

0

None

92

2

0

0

92

2

0 171

Major1

4.12

2.218

1619

1619

Free

HCM 2010 TWSC

Intersection Int Delay, s/veh			
int Dolay, siven			
	CDI	CDT	CDD
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	3
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	3
Major/Minor	Major2		
	171	0	0
Conflicting Flow All			
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1406	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1406	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
-			
Approach	SB		
	0		
HCM Control Delay, s HCM LOS	0		

HCM Control Delay, s	9.2				9.2				0	
HCM LOS	Α				Α					
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	1619	-	-	854	873	1406	-	-		
HCM Lane V/C Ratio	-	-	-	0.004	0.014	-	-	-		
HCM Control Delay (s)	0	-	-	9.2	9.2	0	-	-		
HCM Lane LOS	Α	-	-	Α	Α	Α	-	-		

0

Minor Lane/Major Mvmt

Attachment DTurn Lane Analysis

					N	o Action A	ternative					
					Left Tu	ırn Storage	Lane Warı	rant				
Int #	Туре	Street 1	Street 2	А	M	P	М				Exhibit Ref #*	
				VL	VO	VL	VO	Additional Treatment Required				
1	4-Lane Hwy	US 460 EB	Cox Rd	1	350	7	334			No	Figure 3-3	
1	4-Lane Hwy	US 460 WB	Cox Rd	251	166	158	132			No	Figure 3-3	
Int #	Туре	Street 1	Street 2		AM			PM		Additional Treament	Exhibit Ref #*	
				VA	VO	L	VA	VO	L	Required		
2	2-Lane Hwy	Cox Rd WB	Military Rd	292	85	64%	192	159	14%	Yes: S=200 (PM Peak)	Figure 3-22, Figure 3-19	
3	2-Lane Hwy	Darvills Rd EB	Military Rd	180	44	5%	65	81	14%	No	Figure 3-11, Figure 3-13	
3	2-Lane Hwy	Darvills Rd WB	Military Rd	44	180	39%	81	65	11%	No	Figure 3-16, Figure 3-12	
3	2-Lane Hwy	Military Rd NB	Darvills Rd	27	189	26%	191	27	30%	No	Figure 3-15	
3	2-Lane Hwy	Military Rd SB	Darvills Rd	189	27	6%	27	191	41%	No	Figure 3-11, Figure 3-16	
13	2-Lane Hwy	Darvills Rd WB	Dearing Ave	50	30	4%	49	62	10%	No	Figure 3-11, Figure 3-12	
	Right Turn Treatment											
Int#	Туре	Street 1	Street 2	А	M	P	М	Ac	dditional Tr	eament Required	Exhibit Ref #*	
				PHV - A	PHV - R	PHV - A	PHV - R					
1	4-Lane Hwy	US 460 EB	Cox Rd	166	15	132	12			No	Figure 3-27	
1	4-Lane Hwy	US 460 WB	Cox Rd	350	2	334	6			No	Figure 3-27	
Int #	Type	Street 1	Street 2	А	М	P	М	Ac	dditional Tr	eament Required	Exhibit Ref #*	
				PHV - A	PHV - R	PHV - A	PHV - R					
2	2-Lane Hwy	Cox Rd EB	Military Rd	85	2	159	2			No	Figure 3-26	
3	2-Lane Hwy	Darvills Rd EB	Military Rd	180	130	65	12		Yes: S=20	00 (AM Peak)	Figure 3-26	
3	2-Lane Hwy	Darvills Rd WB	Military Rd	44	8	81	14			No	Figure 3-26	
3	2-Lane Hwy	Military Rd NB	Darvills Rd	27	1	191	18	No Figure			Figure 3-26	
3	2-Lane Hwy	Military Rd SB	Darvills Rd	189	5	27	10	No Figure 3-26				
13	2-Lane Hwy	Darvills Rd EB	Dearing Ave	30	11	62	8			No	Figure 3-26	

VL = Left Turning Volumne (VPH)

VO = Opposing Volume (VPH)

VA = Advancing Volume (VPH)

PHV - R = Peak Hour Volume Right Turns(VPH)

PHV - A = Peak Hour Volumne Approaching Total (VPH)

L = Left turn volume/VA

*VDOT Road Design Manual, Appendix F

						Optio	n A				
					Left Tu		Lane War	rant			
Int #	Туре	Street 1	Street 2	А	M	Р	M			Exhibit Ref #*	
				VL	VO	VL	VO	Additional Treatment Required			
1	4-Lane Hwy	US 460 EB	Cox Rd	1	485	7	383			No	Figure 3-3
1	4-Lane Hwy	US 460 WB	Cox Rd	386	184	207	138		Yes: S=2!	50 (AM Peak)	Figure 3-3
Int #	Туре	Street 1	Street 2		AM			PM		Additional Treament	Exhibit Ref #*
				VA	VO	L	VA	VO	L	Required	
2	2-Lane Hwy	Cox Rd WB	Military Rd	445	85	77%	247	159	33%	Yes: S=200 (PM Peak)	Figure 3-22, Figure 3-21
3	2-Lane Hwy	Darvills Rd EB	Military Rd	184	48	5%	66	82 14% No		No	Figure 3-17, Figure 3-19
3	2-Lane Hwy	Darvills Rd WB	Military Rd	48	184	44%	82	66	12%	No	Figure 3-16, Figure 3-12
3	2-Lane Hwy	Military Rd NB	Darvills Rd	78	342	10%	338	82	18%	No	Figure 3-12, Figure 3-14
3	2-Lane Hwy	Military Rd SB	Darvills Rd	342	78	3%	82	338	13%	No	Figure 3-11, Figure 3-13
					R	ight Turn T	reatment				
Int #	Туре	Street 1	Street 2	А	М	Р	М	Ac	dditional Tr	eament Required	Exhibit Ref #*
				PHV - A	PHV - R	PHV - A	PHV - R				
1	4-Lane Hwy	US 460 EB	Cox Rd	184	33	138	18			No	Figure 3-27
1	4-Lane Hwy	US 460 WB	Cox Rd	485	2	383	6			No	Figure 3-27
Int#	Туре	Street 1	Street 2	А	М	Р	М	Ad	dditional Tr	eament Required	Exhibit Ref #*
				PHV - A	PHV - R	PHV - A	PHV - R				
2	2-Lane Hwy	Cox Rd EB	Military Rd	85	2	159	2			No	Figure 3-26
3	2-Lane Hwy	Darvills Rd EB	Military Rd	184	134	66	13		Yes: S=20	00 (AM Peak)	Figure 3-26
3	2-Lane Hwy	Darvills Rd WB	Military Rd	48	8	82	14			No	Figure 3-26
3	2-Lane Hwy	Military Rd NB	Darvills Rd	78	2	338	21	No			Figure 3-26
3	2-Lane Hwy	Military Rd SB	Darvills Rd	342	5	82	10	No			Figure 3-26

VL = Left Turning Volumne (VPH)

VO = Opposing Volume (VPH)

VA = Advancing Volume (VPH)

PHV - R = Peak Hour Volume Right Turns(VPH)

PHV - A = Peak Hour Volumne Approaching Total (VPH)

L = Left turn volume/VA

*VDOT Road Design Manual, Appendix F

						Optio	n B				
					Left Tu	ırn Storage	Lane War	rant			
Int #	Туре	Street 1	Street 2	А	М	Р	М				Exhibit Ref #*
				VL	VO	VL	VO	Additional Treatment Required			
1	4-Lane Hwy	US 460 EB	Cox Rd	1	485	7	383			No	Figure 3-3
1	4-Lane Hwy	US 460 WB	Cox Rd	386	184	207	138		Yes: S=2	50 (AM Peak)	Figure 3-3
Int#	Туре	Street 1	Street 2		AM			PM		Additional Treament	Exhibit Ref #*
				VA	VO	L	VA	VO	L	Required	
2	2-Lane Hwy	Cox Rd WB	Military Rd	445	85	77%	247	159	33%	Yes: S=200 (PM Peak)	Figure 3-22, Figure 3-21
3	2-Lane Hwy	Darvills Rd EB	Military Rd	185	85	5%	67	210	13%	No	Figure 3-11, Figure 3-13
3	2-Lane Hwy	Darvills Rd WB	Military Rd	85	185	15%	210	67	4%	No	Figure 3-13, Figure 3-11
3	2-Lane Hwy	Military Rd NB	Darvills Rd	32	342	28%	204	83	30%	No	Figure 3-15
3	2-Lane Hwy	Military Rd SB	Darvills Rd	342	32	44%	83	204	75%	No	Figure 3-16
13	2-Lane Hwy	Darvills Rd WB	Dearing Ave	54	169	19%	50	109	14%	No	Figure 3-14, Figure 3-13
					R	ight Turn T	reatment				
Int#	Туре	Street 1	Street 2	А	М	Р	М	Ac	dditional Tr	eament Required	Exhibit Ref #*
				PHV - A	PHV - R	PHV - A	PHV - R				
1	4-Lane Hwy	US 460 EB	Cox Rd	184	33	138	18			No	Figure 3-27
1	4-Lane Hwy	US 460 WB	Cox Rd	485	2	383	6			No	Figure 3-27
Int#	Туре	Street 1	Street 2	А	М	Р	М	Ac	dditional Tr	eament Required	Exhibit Ref #*
				PHV - A	PHV - R	PHV - A	PHV - R				
2	2-Lane Hwy	Cox Rd EB	Military Rd	85	2	159	2			No	Figure 3-26
3	2-Lane Hwy	Darvills Rd EB	Military Rd	185	135	67	14		Yes: S=20	00 (AM Peak)	Figure 3-26
3	2-Lane Hwy	Darvills Rd WB	Military Rd	85	53	210	144		Yes: T=20	0 (PM Peak) ^(a)	Figure 3-26
3	2-Lane Hwy	Military Rd NB	Darvills Rd	32	0	204	14			No	Figure 3-26
3	2-Lane Hwy	Military Rd SB	Darvills Rd	342	5	83	10			No	Figure 3-26
13	2-Lane Hwy	Darvills Rd EB	Dearing Ave	169	151	109	59	Yes: S=200 (AM Peak)			Figure 3-26

VL = Left Turning Volumne (VPH)

VO = Opposing Volume (VPH)

VA = Advancing Volume (VPH)

PHV - R = Peak Hour Volume Right Turns(VPH)

PHV - A = Peak Hour Volumne Approaching Total (VPH)

L = Left turn volume/VA

⁽a) No existing right turn lane. Minimum storage would be 100 feet per VDOT Road Design Manual, Appendix F, Table 3-1

^{*}VDOT Road Design Manual, Appendix F

SECTION 3 – TURNING LANES

Turn Lane Criteria for Single and Dual Lanes

As a general policy, left-turn lanes are to be provided for traffic in both directions in the design of median crossovers and in one direction for directional median openings (see Figure 3-25 illustration) on non-access controlled four-lane or greater divided highways using controls as shown in Figure 3-1 and adjusted <u>upward</u> as determined by Figure 3-3 or by capacity analysis for left-turn storage.

Left-turn lanes should also be established on two-lane and four lane undivided highways where needed for storage of left-turn vehicles and/or prevention of thru-traffic delay as shown in Figure 3-1 and adjusted upward as determined by Table 3-1 and Figure 3-5 through 3-22 or by capacity analysis for left-turn storage.

<u>LENGTH</u>	OF STORAGE	<u>TAPER</u>	- Rural		
Rural - For Design Speeds 50 MPH or Higher	*L - 200' min. (For 240 or fewer vehicles during peak hour, <u>making turn</u>)	- For Design Speeds 35 MPH or Higher	**T - 200' Min.		
Rural - For Design Speeds 45 MPH or Less	*L - 100' min. (For 60 or fewer vehicles during peak hour, <u>making turn</u>)	- For Design Speeds 30 MPH or Less **T - 100' Min. (single) **T - 200' Min. (d			
	upward as determined by capacity and Right Turn Storage.	**Tapers are to be straight-line unless local policy requires reverse curves. In congested areas the taper length may be reduced to increase storage length. However, a design waiver shall be required.			
<u>LENGTH</u>	OF STORAGE	TAPER - Urban			
	capacity analysis for Left and Right	- For Design Speeds 50 MPH or Higher	**T - 200' Min.		
Turn Storag	ge (100' Minimum)	- For Design Speeds 45 MPH or Less	**T - 100' Min. (single) **T - 150' Min. (dual)		
	-				

FIGURE 3-1 TURN LANE CRITERIA FOR SINGLE AND DUAL LANES

Taper rates: Rural - 8:1 for design speeds 30 mph and less, 15:1 for design speeds 35 mph and greater. Urban - 8:1 for design speeds 45 mph and less, 15:1 for design speeds 50 mph and greater. For urban dual lane taper (150' min.), See 2011 AASHTO Green Book, Chapter 9, Section 9.7.1, page 9-127.

Note: Taper lengths shown above were compiled using these formulas and were rounded up.

*

^{*} Rev. 1/14

Warrants for Left Turn Storage Lanes on Four-Lane Highways

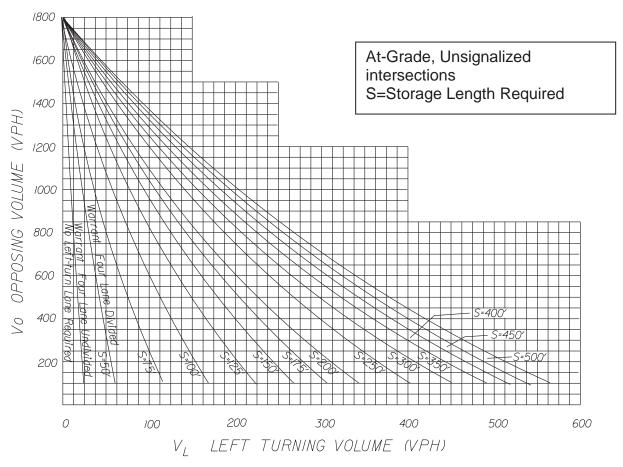


FIGURE 3-3 WARRANTS FOR LEFT TURN STORAGE LANES ON FOUR-LANE HIGHWAYS

Figure 3-3 was derived from *Highway Research Report No. 211*.

Opposing volume and left turning volume in vehicles per hour (VPH) are used for left turn storage lane warrants on four-lane highways.

For plan detail requirements when curb and/or gutter are used, see VDOT's <u>Road Design Manual</u>, Section 2E-3 on the VDOT web site: http://www.virginiadot.org/business/locdes/rdmanual-index.asp.

Left-turn lanes should also be established on two-lane highways where traffic volumes are high enough to warrant them.

Deleted Information*

^{*} Rev. 1/14

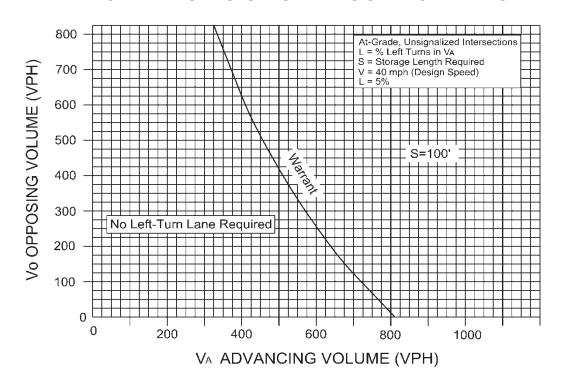


FIGURE 3-5

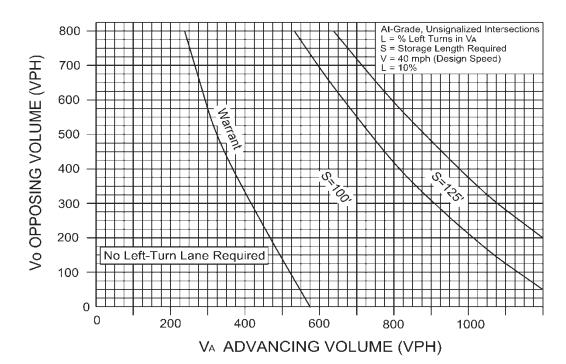


FIGURE 3-6

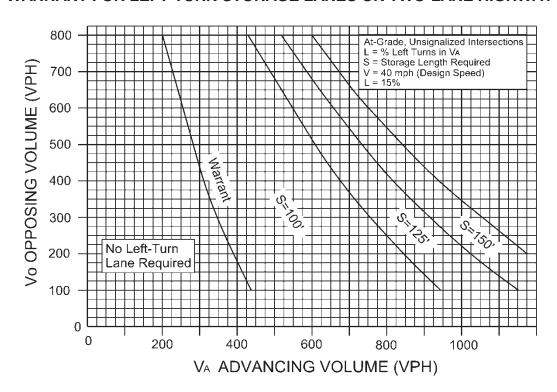


FIGURE 3-7

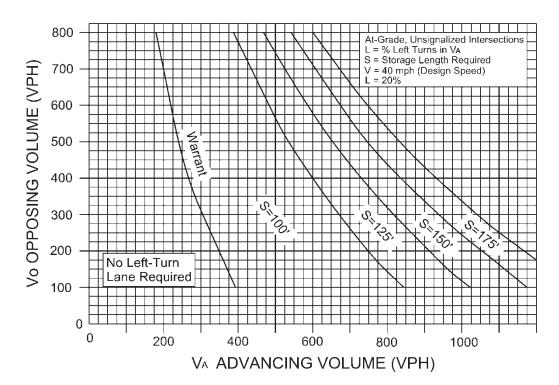


FIGURE 3-8

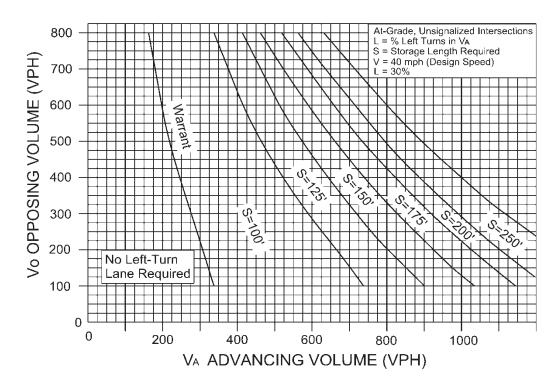


FIGURE 3-9

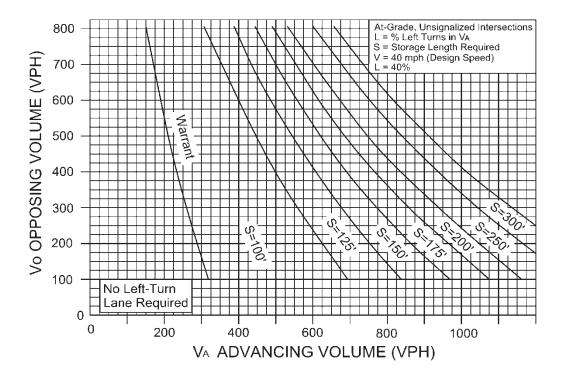


FIGURE 3-10

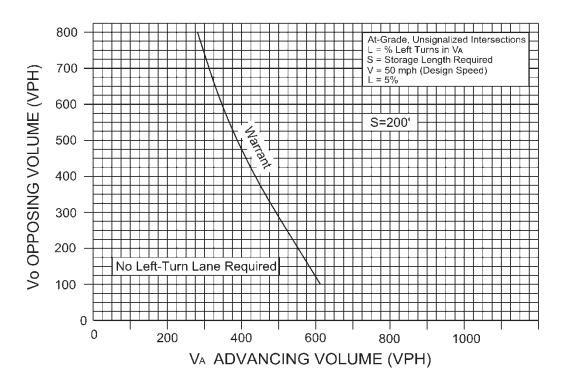


FIGURE 3-11

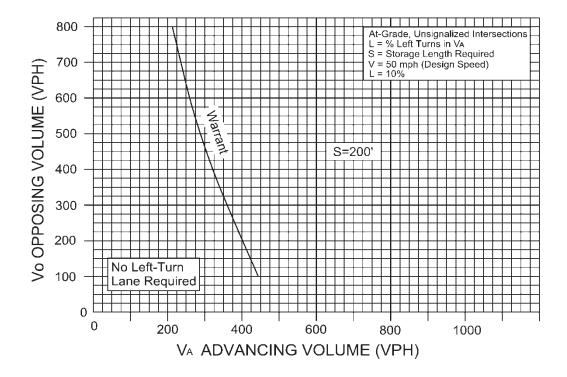


FIGURE 3-12

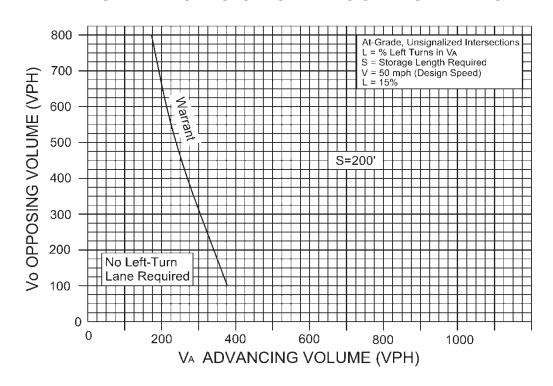


FIGURE 3-13

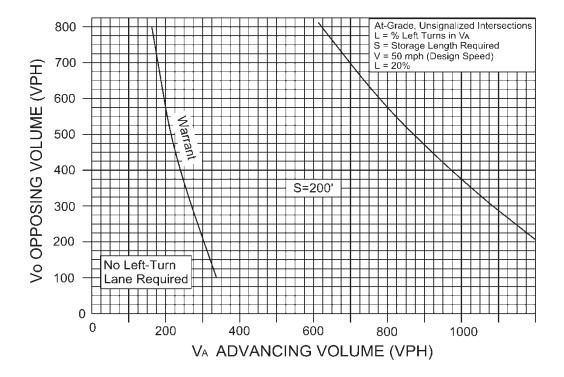


FIGURE 3-14

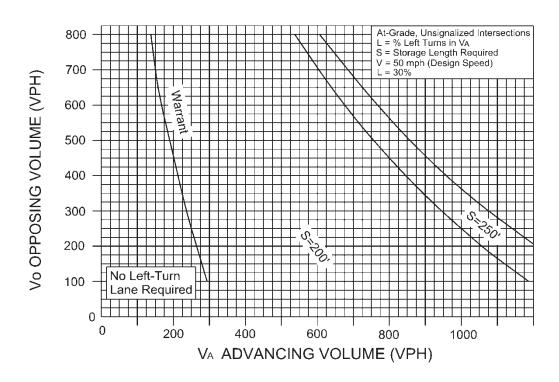


FIGURE 3-15

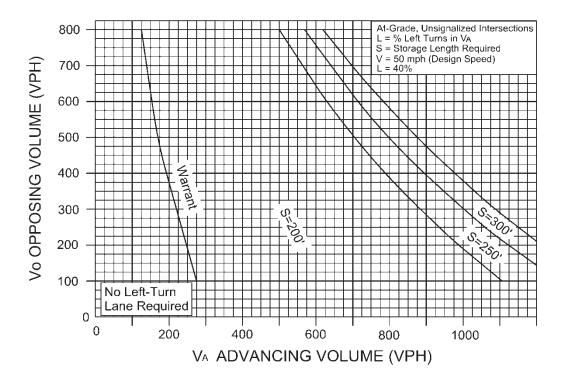


FIGURE 3-16

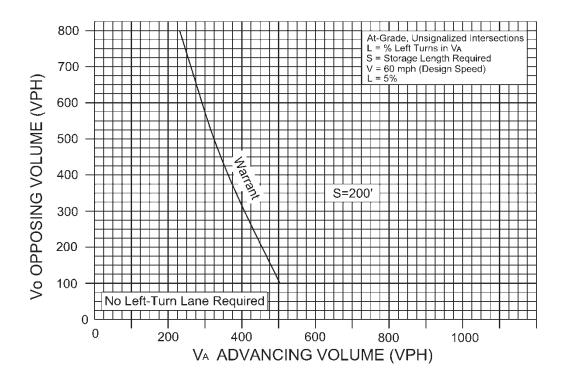


FIGURE 3-17

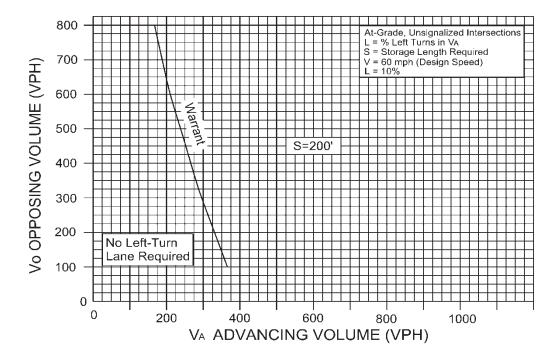


FIGURE 3-18

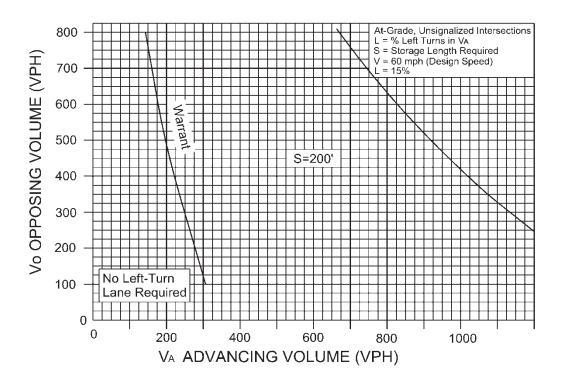


FIGURE 3-19

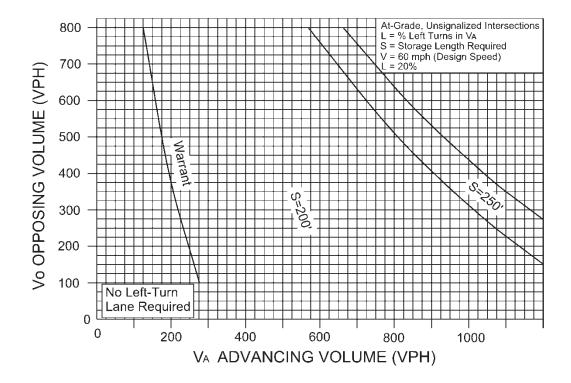


FIGURE 3-20

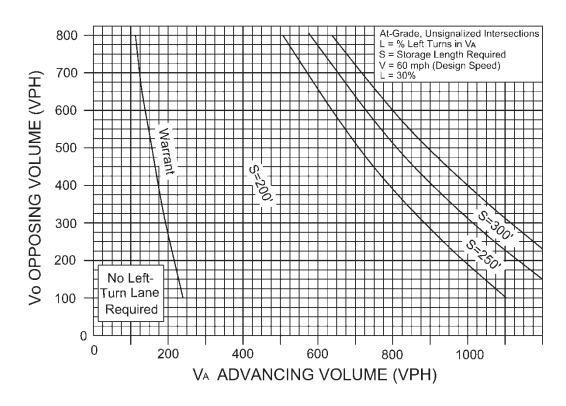


FIGURE 3-21

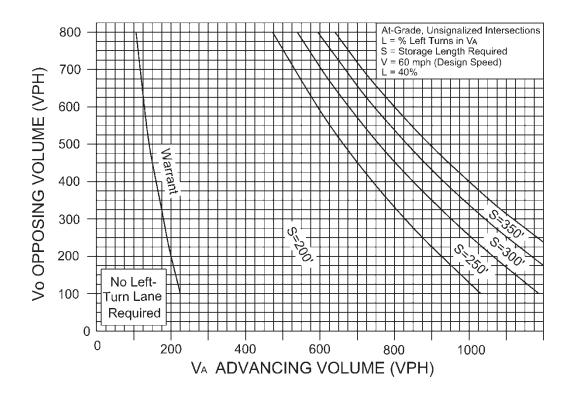
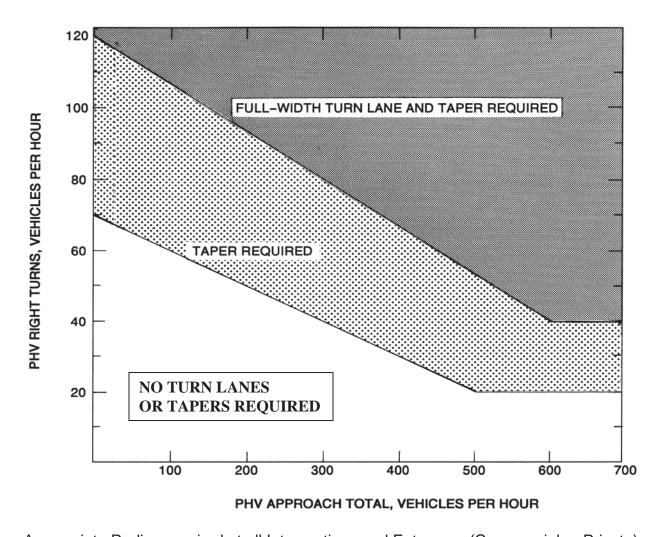


FIGURE 3-22



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.

Adjusted right turns = PHV Right Turns - 20

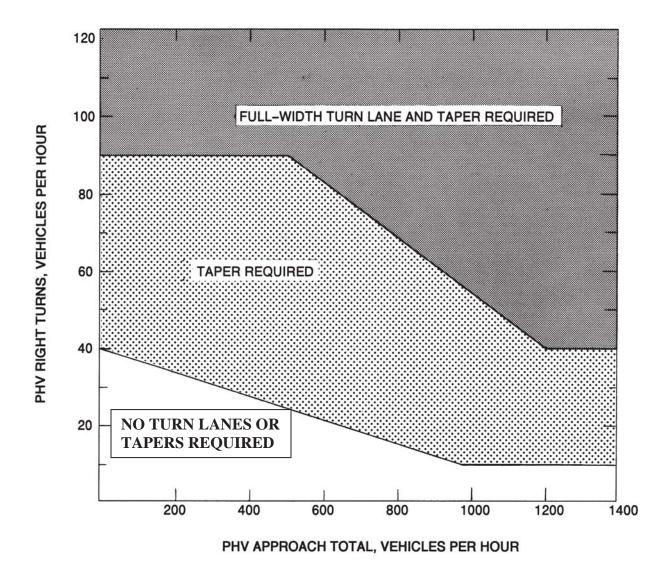
If PHV is not known use formula: $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

FIGURE 3-26 GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV- - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

If PHV is not known use formula: $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

FIGURE 3-27 GUIDELINES FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)